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Operationalisation of Travel Experience in an Integrated Planning Process: City of Lahti Case

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Abstract

There is an increasing interest in the concept of travel experience due to its critical role in promoting sustainable transport modes. However, the complex nature of people's travel leads to a multidimensional and sophisticated concept of travel experience. Therefore, travel experience becomes a concept that requires an integrated land use and transport planning approach that can communicatively merge different types of knowledges involved in transport planning. However, there is a gap in planning literature in understanding how travel experience can be effectively used in an integrated planning process, which is also affected by the socio-material context of planning organisations.

The aim of this study is to explicate the lessons learnt about challenges of implementing travel experience into an integrated planning process in a mid-sized Nordic city, i.e., Lahti in Finland. The study aims at unravelling the values and conceptions of planners while they are muddling through complexities and interdependencies of human-centric planning issues within organisational dynamics. This study takes a change-oriented, design science approach to the research methodology.

Overall, the study shows that practitioners recognise the value of travel experience as a potentially useful planning concept. Findings suggest that practitioners' values concerning the implementation possibilities of travel experience are at a transition from an instrumental rationality model to communicative rationality model, framed by the interdependencies between usefulness and usability of experiences with travel. Findings also show that technologies used in the planning processes mediate as well as shape the conceptions of planners for operationalising experiential input. Findings also show that practitioners do not always recognise the need for reflection, leading to disruptions in the generation of new units of knowledge. Finally, the dynamic and non-linear model of organisational learning is challenging to capture with the current research methods. Further studies on producing research methods accounting for the sociological side of the planning practice are necessitated.

Keywords travel experience, integrated planning, participatory planning, organisational learning

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List of Abbreviations

CoL	City of Lahti
GD	group discussion
STS	Satisfaction with Travel Scale
UrAMo	Urban Aesthetics in Motion Project

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“By far the greatest and most admirable form of wisdom is that needed to plan and beautify cities and human communities.”

– Socrates

1 Introduction

Pursuing the transition out of car dependency is irreducibly connected to transforming lifestyles. These lifestyles frame and, at the same time, are framed by the urban mobility systems. Ultimately, framing lifestyles and daily travel activities is the most challenging centrepiece of achieving more sustainable mobility systems (Banister et al., 2013). Bilateral relations between people’s lifestyles and their daily mobility behaviours have placed the idea of influencing mobility behaviour on the agenda of transport planning research (Acker, Goodwin & Witlox, 2016). Among several currents of research on altering the daily mobility behaviour, there is an increasing interest in the concept of travel experience (for example, see Schiefelbusch, 2010; Gärling, 2018; De Vos et al., 2015; Friman, Ettema & Olsson, 2018; De Vos & Witlox, 2017). The particular focus on travel experience is due to its -recently acknowledged- critical role in promoting sustainable transport modes (De Vos et al., 2018; Friman, Ettema & Olsson, 2018). Kahneman and Krueger (2006) point out that the change for a desired behaviour is more likely to occur if the person can link positive emotional responses with the execution of the behaviour. More specifically, a consistent positive experience of travel by a certain transport mode has the potential to affect the mobility behaviour into more frequent use of that transport mode in the future (Friman, Ettema & Olsson, 2018). To this end, experiences during travel activities gained attention in transport research since early 2000s (for example, see Mokhtarian & Salomon, 2001) and since 2010s within well-being studies (for example, see Ettema et al., 2010; Ettema et al., 2011; Ettema et al., 2016; Bergstad et al., 2011; Olsson et al., 2013; De Vos et al., 2013; De Vos et al., 2017; De Vos, 2018). This thesis also follows the general trends of focusing on quality of travel time, beyond the sole focus on quantity of travel time.

Within the currently dominant transport planning thinking, travel time is perceived as a disutility and evaluated in terms of opportunity cost, following the economic underpinnings of the transport planning profession (Metz, 2008; Schiefelbusch, 2010; Banister et al., 2013). In this line of thinking, inevitably the conditions of the actual act of travel are marginalised (Schiefelbusch, 2010). Mokhtarian and Salomon (2001) argue that the mainstream conceptualisation of travel as a derived demand is myopic. They assert that people can also see the travel itself as an activity that they take pleasure out of, due to several reasons such as enjoyment of a route. Similarly, Banister et al. (2013) and Schiefelbusch (2010) suggest that the predominance of civil engineering skills in the transport engineering profession, together with the economic thinking, assumes that infrastructure provision is the single most means to have an impact on the conditions of urban mobility. This also undermines the value of the conditions of the travel itself. Moreover, this economic thinking and the primacy of the engineering skills fall short in recognising the “human” side of travel. The act of moving is a fundamental condition of human nature. More than a simply means to reach spatially-dispersed activities, travel is a social, political, physical, technical and cultural (Jensen, 2013) phenomenon with meanings attached.

Systematic studies on the travel experience have been mostly seen within well-being studies and travel satisfaction studies, even though the term “travel experience” is not explicitly used within those studies and travel experience only constitutes a smaller fraction of the focus of those studies. Earlier well-being studies have shown that domain-specific context of travel contributes to the overall well-being (Olsson et al., 2018). According to De Vos et al. (2013), travel affects well-being through experiences during destination-oriented travel (for example, see Morris & Guerra, 2015b), activity participation enabled by travel (Ettema et al., 2010), activities during destination-oriented travel (Lyons et al., 2007), trips where travel is the activity (for example, see Mokhtarian & Salomon, 2001), and through potential travel (for example, see Currie et al., 2010). The focus of previous research has been mainly on the spatial and social factors for well-being, concluding that well-being is subjectively experienced, has multiple dimensions and encompasses cognitive and affective long-term and short-term aspects (Schwanen & Wang, 2014). Similar to well-being studies, Duarte et al. (2010) argue that the concept of happiness as the perceived satisfaction of a mode of transport should be an integral part of project evaluation as the competitiveness of alternatives can be also measured by the derived long-term happiness. Travel satisfaction studies, on the other hand, conceptualise travel satisfaction as the experienced emotions during a trip and the cognitive evaluation of this trip (De Vos & Witlox, 2017; Mao et al., 2016). Travel satisfaction studies have focused so far on the interdependencies between travel satisfaction and transport modes (for example, see De Vos et al., 2016; Fellesson & Friman, 2012), trip duration (for example, see Morris & Guerra, 2015a), traveller group (for example, see St-Louis et al., 2014, Redman et al., 2013; Gatersleben & Uzzell, 2007), residential location (for example, see Cao & Ettema, 2014; De Vos & Witlox, 2017,), attitudes (for example, see Ye & Titheridge, 2017) and waiting during the travel (for example, see Friman, 2010).

Apart from the studies within well-being and travel satisfaction fields, there have been examples of other studies which aim at explicating experiences with travel. In his formative study, Schiefelbusch (2010) defines travel experience as the sensual and perceptual impressions acquired through all senses while travelling. He also points out that due to its multi-perceptual nature, different elements of the mobility ecosystem as well as the planning decisions can affect travel experience. However, he points out that travellers’ perception of the travel is not accounted for in transport planning despite of its capacity for creating the desire for physical movement. Moreover, the field of aesthetics also contributed to the existing body of travel experience research by pointing out that travel has an aesthetic dimension (Naukkarinen, 2005; Maskit, 2017). Also in the field of aesthetics, Stefansdottir (2014) explicates the aesthetic experiences of cyclists as a multisensory phenomenon. Similarly, several studies explicate the experiences with walking (for example, see Bassett, 2004; Matos Wunderlich, 2008, Middleton, 2010; Johansson et al., 2016). Experiences with public transport have also received attention (for example, see Fellesson & Friman, 2012). Finally, travel experience of car users has also been explicated in several studies (for example, see Mann & Abraham, 2006; Sheller, 2004).

The complex nature of people’s travel as well as their experiences with travel leads to a multidimensional and sophisticated concept of travel experience. The discourse transcends beyond the comfort of a transport vehicle or the physical context of a leisurely trip. Therefore, travel experience becomes a concept that requires a more comprehensive look than transport planning can provide alone for its effective implementation into planning

processes. The complexity of travel experience requires an integrated land use and transport planning approach that can communicatively merge different types of knowledges such as citizens' participatory experiential knowledge, technical as well as practice-centred knowledges of the experts in relation to the knowledge of local political conditions (te Brömmelstroet & Bertolini, 2010; Vigar, 2017). However, there is a gap in planning literature that researches how this multidimensional concept of travel experience can be made useful and usable in a communicative, integrated planning process. Furthermore, there is also a lack of studies that account for the effect of the socio-material context of planning organisations on the planning processes, when it comes to the operationalisation of such a disaggregate concept with conflicting implications to the process as well as to its actors.

The aim of this study is to explicate the lessons learnt about challenges of operationalising citizens' experiences with travel into an integrated planning process in a mid-sized Nordic city, i.e., Lahti in Finland. The study aims at unravelling the values and conceptions of planners while they are muddling through complexities and interdependencies of planning issues within organisational dynamics. In particular, the focus is on the implementation of participatory and experiential citizen input in a usable and useful way into the planning process. In this case, this study is not a study of planning practice in general but rather in a contextualised manner, which makes the subject matter of the study about not only planning practice but also about organisational learning. The outcome of the study is twofold. First, this study presents a snapshot of the challenges planners are facing and their conceptualisations. In doing so, the study contributes to the current planning practice with lessons learnt from the research outcomes. Second, the study contributes to the planning practice research with presenting the lessons learnt from the research process of this study.

In the following chapters, the needs and challenges of integrated and participatory planning in relation to knowledge and organisational learning are presented in Chapter 2. Then, in Chapter 3, the case city Lahti and the planning context are presented. Chapter 4 discusses the research approach and presents the research stages in detail, especially focusing on the development of an online, public participation survey and on the group discussion held with the practitioners from the case city. Findings of the study are explicated in Chapter 5. Chapter 6 contains discussion of lessons in relation to research outcomes and lessons about the research process. The study ends with conclusions presented in Chapter 7.

2 Organisational Learning in Integrated and Participatory Planning

2.1 Integrated and Participatory Planning

Both land use planning and transport planning research have been increasingly interested in the integration of these two disciplines, especially on the account of that cities have been under constant pressures from sustainability challenges (for example, see Waddell et al., 2007; Banister, 2008; Straatemeier & Bertolini, 2008; te Brömmelstroet & Bertolini, 2008; te Brömmelstroet & Bertolini, 2010; Hrelja, 2015). Banister (2008) argues that an integrative approach to land use and transport planning is necessitated since the reason for difficulties in the transport planning field often does not stem from the inadequacies or faults of the transport system itself but rather from other relevant aspects of urban environment. Similarly, Stead, Geerlings & Shiftan (2012) point out that in order to achieve sustainability goals, a comprehensive, long-term, multi-faceted and multi-levelled coordination of different sectors alongside the transport sector should be established. The claimed contribution of such integration is that land use planning and transport planning can provide complementary support to each other and create a synergic approach to the challenges cities have been facing in a level that neither of the professions can reach on their own (te Brömmelstroet & Bertolini, 2010; Geerlings & Stead, 2003; Curtis & James, 2004).

Having been affected by the long-standing practices of siloed thinking, integration of land use and transport planning is a rather difficult endeavour. Te Brömmelstroet & Bertolini (2010) argue that there are two types of major barriers to land use and transport planning integration, one being institutional differences and the other being substantive differences. Institutional differences refer to, for example, different units of planning having their own budgets to achieve their own objectives through their own procedural means or lack of interest in integration on an institutional level. On the other hand, substantive differences refer to, for example, discrepancies in “planning objects (places vs. networks/flows); tools and instruments (e.g., spatial GIS vs. mathematical transport models); operational modes (holistic visioning vs. optimising problem solving); and educational carriers” (te Brömmelstroet & Bertolini, 2010). Due to these differences, one of the essential barriers towards the integration has been claimed to be the lack of a common language (te Brömmelstroet & Bertolini, 2008), and this has remained to be a persistent challenge. The practitioners as well as the researchers of the two fields have developed their own lexicon as they have different tools at their disposal and more importantly their conceptualisations of the built environment are distinctive (te Brömmelstroet, 2010). These discrepancies in the practices and the languages of land use planners and transport planners have inevitably created professions that work towards the same goals, e.g., resource efficiency, on the same spatial level, e.g., city level, but in their own organisational silos. Similarly, Mäntysalo & Kanninen (2013) describe the situation as the case of two autonomous yet mutually-dependent disciplines.

The addition of local and experiential inputs from the citizens to the repertoire of knowledge-informed planning paradigm (Kahila-Tani et al., 2016) has been transforming both land use planning transport planning even though transport planning has been relatively slower to adopt the changes (Mladenović et al., 2018), further increasing the discrepancies between the professional knowledge bases. Public participation is considered

to be integral for both professions, through the recognition of the plurality of voices in a democratic society (for example, see Healey, 1997) and enhancing the quality of planning outcomes (for example, see Kahila-Tani et al., 2016). However, the latter has been especially challenging due to the fact that recognition of use value does not necessarily bring about the conditions for usefulness. Inspired by the planning support systems literature (for example, see Pelzer, 2017; te Brömmelstroet, 2017; Champlin et al., 2018; Goodspeed, 2016); the concepts of usefulness and usability can be introduced here to explicate the additional strains on the practical and theoretical knowledge databases of land use planning and transport planning. As argued by Pelzer (2017), contextually-specific characteristics of the planning task require the development of certain technologies, collectively amounting to the degree by which the planning support system can enhance the planning process (i.e., utility) (see Figure 1). The easiness of utilising the suggested utility (i.e., usability) eventually affects the influence on the planning practice. However, the vagueness in the operationalisation characteristics (i.e., usability) and in the added value for the planning practice (i.e., usefulness) of participatory input lead to implementation bottlenecks. Therefore, addition of citizens' experiential inputs whose implementation into the process of city making is not so straightforward creates further tensions on the existing knowledge databases of land use planners and transport planners.

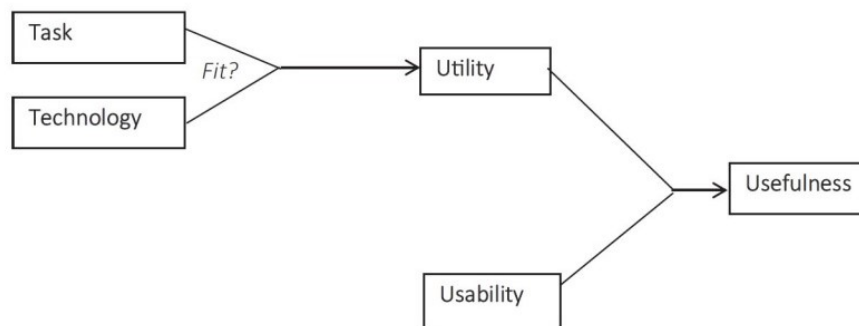


Figure 1. Usefulness as an outcome of utility and usability (Pelzer, 2017)

The integration of knowledge databases of land use planning and transport planning has been challenged even further by recognising the limitations of the narrow instrumental rationality in planning practice (Healey, 1992; Morçöl, 2001; Willson, 2001; Lindelöw, 2016). The narrow professional lens of transport planning sector is an inevitable outcome of profession's underpinnings framed by economic thinking and engineering skills (Schiefelbusch, 2010). Willson (2001) argues that transport planning professionals use the language of numbers as a value-free, objective, definitive and exact description of the world. He further explicates the differences between instrumental and communicative rationality in Figure 2. Similarly, land use planners have also been criticised by their myopic take on the complex, uncertain, unstable, unique and value-laden nature of city-making (for example, see Schön, 1983). Signalling a transition for both land use and transport planners (Willson, 2001; Campbell & Marshall, 2000), the awareness that instrumental rationality model of planning is inadequate in deciding the goals, drafting alternative pathways and selecting the best possible alternative has paved the way for a transition to a communicative rationality ideal in planning. The main premise of the communicative rationality ideal is the social process of reasoning together (Healey, 1992), even though a myriad of names are given to the process (te Brömmelstroet et al., 2006). As argued by Willson (2001), that the communicative rationality ideal is based on the

interaction of multiple actors, unlike a single actor-based exclusive procedure instrumental rationality model, and recognises the value of learning together and navigating through numerous types of knowledge for deliberative actions. Communicative rationality ideal puts the emphasis on increasing the capacity for deliberative, democratic and transparent decision-making for plurality of problems. To this end, the communicative rationality ideal naturally encompasses a professional-level integration of land use planning and transport planning, together with the citizens' contextualised experiential knowledge in the process and in fact, with many other sectors and stakeholders having an interest in the making of a city.

Issue	Instrumental Rationality	Communicative Rationality
1. Role of the planner	Expert/analyst. Often a specialist (e.g., modeling, community affairs, finance, etc.) Official role is objective, but usually plays a political role.	Communicative expert with technical knowledge and skill. Plays multiple roles--process design, activist mediation, education and technical roles. Self discloses roles.
2. Purpose of planning	Problem solving and optimization, with a rational decision-maker as the client. Finding the best solution for a fixed and known set of ends.	Reaching an understanding that facilitates action. Increasing capacity for reasoned deliberation and democratic decision-making.
3. Planning process	A sequence of linear steps (with feedback). Assumes that facts and values can be addressed separately. Action follows knowledge.	Recursive process: fact, value and discovery are interlinked. Emphasizes learning and consensus building. Is invented/modified as part of the planning activity. Action and knowledge are simultaneous.
4. Communication	Planners' communication is assumed to provide accurate representations of facts and values; has standard meaning outside of action.	Communicative processes produce meaning and linguistic "action". Planners seek to improve the validity with which claims are made, e.g., truthfulness, legitimacy and sincerity.
5. Problem framing	Problems can be defined and bounded in a single frame; problems can be broken into pieces and recombined; problems can be defined in the absence of solutions; problems can be "solved".	Multiple problem definitions and frames are acknowledged; problems are broadly bounded. Planning actively engages multiple problem frames, seeks creative redefinition.
6. Analysis/ Modeling	Reductionism, reliance on data and models as forms of inquiry. Knowledge is empirically established.	Quick-response models used along with other forms of knowing. Modeling claims are part of discourse.

Figure 2. Comparison of instrumental and communicative rationality (Willson, 2001)

2.2 Knowledges Framing and Reflection

A set of mutually accepted and understood concepts, i.e., the common knowledge of integrated planning, is sought after in order to tackle the so-called language barrier of transport planners and land use planners who also need to work with a more dispersed and experiential kind of knowledge held by citizens. However, the communicative rationality ideal fails to direct planners to integrate these distinctive kinds of knowledge (te Brömmelstroet et al., n.d.). Te Brömmelstroet and Bertolini (2010) propose a mechanism of knowledge generation, based on Nonaka and Takeuchi (1995, as cited in te Brömmelstroet & Bertolini, 2010), in order to connect the communication gaps among practitioners, citizens, researchers and many other parties involved. Knowledge generation mechanism iteratively spans between technical aspects of knowledge and personal aspects of knowledge. Through this mechanism, not only new units of knowledge are generated but also transformative aspects of newly created units of knowledge emerge (te Brömmelstroet & Bertolini, 2010).

In order to comprehend the knowledge generation mechanism better, the two basic distinctions between knowledge types should be elaborated, as tacit and explicit knowledge. Explicit knowledge, also referred as systemised knowledge by Healey (1997), can be described as the expert knowledge gained through an accumulation of professional know-how (Smith, 2001). According to Schön (1983, p.23), systemised professional knowledge is “specialised, firmly bounded, scientific and standardised”. Therefore, explicit knowledge has been on the focus of both transport planning and land use planning due to its practicality of implementation. Tacit knowledge, on the other hand, is a type of knowledge that is more difficult to openly surface and be codified, explained and shared as it is gained through personal experiences (Smith, 2001). Schön (1983, p.49) writes:

“When we go about the spontaneous, intuitive performance of the actions of everyday life, we show ourselves to be knowledgeable in a special way. Often we cannot say what it is that we know. When we try to describe it, we find ourselves at a loss, or we produce descriptions that are obviously inappropriate. Our knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing. It seems right to say that our knowing is in our action.”

Schön (1983, p.61) asserts that a means to unravel the hidden nature of tacit knowledge is reflection. Actively thinking about the action itself, its underlying values, (mis)conceptions, goals and assumptions in relation to the socio-material context framing the action can help the practitioners with revealing the tacit knowledge. The recognition of reflection being actively used in planning practice has gradually occurred. As suggested by Hase (2014), the idea can be traced back to Confucius, who rendered reflection as the noblest way to acquire wisdom, and to Socrates, who claimed that an unexamined life is not worth living. Reaching modern times, Dewey suggested that meaning in thought is facilitated by reflection (Hase, 2014). Kolb (1984) developed a cyclical learning model called Experiential Learning Model in which reflection plays a central role. Schön (1984) elaborated the idea of a reflective practitioner in his seminal work. Vigar (2017) contributes to the taxonomy of knowledge types present in transport planning by adding two more, namely, embodied local knowledge and political knowledge. He suggests that technical knowledge (explicit knowledge) and knowledge of what works (tacit knowledge) should be understood together with the knowledge of citizens’ values and political climate.

Nevertheless, he also suggests that iterative reflection of the ways in which different knowledge types come together can help define the integration plane of transport planning processes. Eventually, reflection plays a crucial role in the integration of the distinctive sets of knowledges to be found in the repertoire of land use planners and transport planners, especially having in mind the complexity of the sustainability challenges in the urban landscape and the need for transformative thinking.

2.3 Organisational Learning for Transformation: Expansive Learning

The complexities and interdependencies of sustainability pressures on the professional decision-making process introduce an adaptive and interactive model of organisational development which is able to address the ambiguity, uncertainty and uniqueness of the process (Khakee et al., 2000). To this end, organisational learning activities leading to transformative knowledge generation become essential. Being more than a linear accumulation of facts and information, organisation learning should also cater for creation of new units of knowledge and mental models. In the framework of organisational learning, a learning individual cannot be automatically aggregated to a learning organisation (Wang & Ahmed, 2003). Organisational learning requires a social interaction among its members. Furthermore, these social interactions also create the socio-material context of the learning organisation.

Expansive learning theory (Engeström, 1987) is introduced in this study for its understanding of organisational knowledge in terms of instability and vagueness, two concepts that naturally emerge in the making of organisational transformation. Expansive Learning Theory suggests that practitioners learn new institutional habits and actions as those habits and actions are being created by the practitioners. Through this dynamic knowledge generation process, expert knowledge required to adapt and respond to the emerging challenges can be simultaneously materialised as organisational habits. Unlike a more traditional version of learning (the one who knows teaches and the one who does not know receives the knowledge in a manner decided by the one who teaches), expansive learning theory acknowledges that during transformative learning, the learning subject might be unstable or undefined (Boelens & de Roo, 2014), which is the case for the wicked problems (Rittel & Webber, 1973) of the planning practice most of the time. As seen in Figure 3, expansive learning takes place in iterative cycles of reflective actions within collective learning dynamics of the organisation as a learning community rather than a learning individual (Engeström, 1987). The cyclical and iterative expansive learning model suggests a dynamic, ever-changing and non-linear understanding of organisational learning, accounting for reflective practices and the social and technical climate of the organisation.

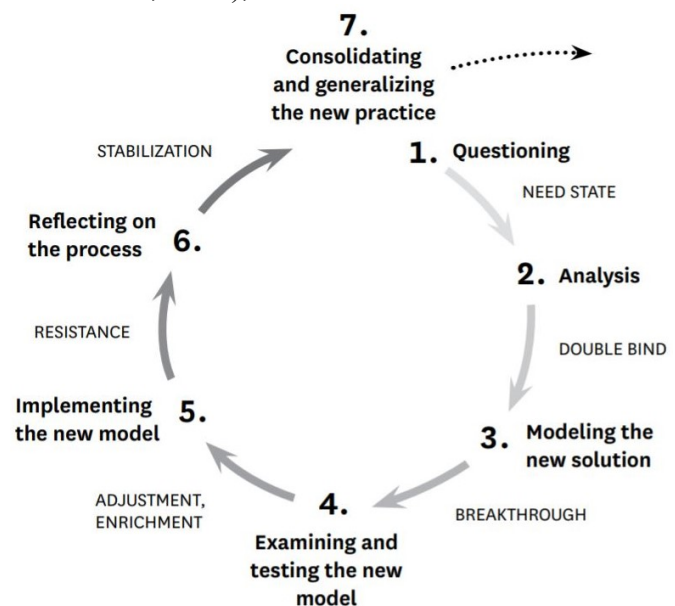


Figure 3. Expansive learning cycle (Kangasoja, 2017)

3 Planning Context

The City of Lahti (CoL) was chosen as the case city of this study, due to its being a large enough city that experiences the sustainability challenges as many cities. In addition, CoL is an interesting example from the planning perspective, having a continuous, data-intensive, strategic integrated planning system with a special focus on public participation. Choosing the CoL as the case city can be interpreted as the study of a critical case (Flyvbjerg, 2006) for integrated and participatory planning practices to some extent, given the fact that the challenges identified in the CoL are relatively common. Similar to other rapidly urbanising cities in Finland and in the world, the CoL is struggling with climate change issues, simultaneous densification and urban sprawl and streetscape design under limited resources. Therefore, lessons learnt from the CoL have the potential to inform the planning practice and research on integrated and participatory planning.

3.1 Finnish Planning System

The Finnish planning system is described, organised and regulated primarily by the Land Use and Building Act. The Land Use and Planning Act principally aims at reducing planning bureaucracy and increasing performance of the planning system (Puustinen et al., 2017). The Finnish planning system is a hierarchical and regulatory land use planning system with four statutory instruments. As defined by the Land Use and Planning Act, the higher level instruments guide the lower level instruments. On the upper level, national land use guidelines oversee that the national priorities and objectives are reflected on the land use plans. These guidelines are prepared in the form of writing by the Council of State. On the second level, regional plans deal with regional level land use and community structure issues, such as regional level planning of transport and technical services or the ecosystem of regional businesses. Regional plans are prepared by regional councils which are not elected governments per se but contain members from the participating municipalities (Land Use and Planning Act, n.d.). Local master plans, on the third level, are considered as the physical representation of the city structure and drawn by the municipalities. Local master plans also lay out guidelines on integrating functions of the city. Finally, on the lowest level, there are local detailed plans which are also drawn by municipalities. Local detailed plans set the grounds for building permits through a detailed description of the use of land, prescribe the “good building practice” and set the conditions for special planning areas (Land Use and Building Act, n.d.). The strong position of the municipalities for the local master planning and detailed planning was ensured by the Land Use and Planning Act (Puustinen et al., 2017).

3.2 City of Lahti

Lahti is located in Southern Finland, 100 kilometres north of the capital Helsinki (see Figure 4). The CoL was founded in 1905. Similar to most Finnish cities, before going through a period of rapid urbanisation after 1970s due to industrialisation in Finland that started in the 1960s, Lahti used to be a modest village depended on the its western neighbour Hollola, a wealthy agricultural municipality (City Introduction & Context, n.d.). A merger agreement between Lahti and the neighbouring municipality Nastola (shown in Figure 4) has been in effect since early 2016, which caused Lahti to more than triple its area yet to increase its population only by 15000 inhabitants. Currently, it is home to approximately 120000 inhabitants. Table 1 shows the changes in population, area,

population density following the merger as well as the current GDP and climatic conditions of the city (City Introduction & Context, n.d.).



Figure 4. Map showing the location of Lahti and Nastola, in relation to Helsinki and other major cities in Southern Finland.

Table 1. Table showing the population, area, population density changes before and after the merger and the GDP measures and climate classification as of 2016 (City Introduction & Context, n.d.)

Indicator		Units	Year of data
Population *data 31 December 2016	103 846	Inhabitants	2015
	→		→
	119 452*		2016
Area	154.58	km ²	2015
	→		→
	517.63		2016
Population Density	671.8	Inhab./km ²	2015
	→		→
	267		2016
GDP	30 783.10	€/Capita	2014
Köppen climate classification	Dfc: Subarctic climate Cold winters and short, cool-to-mild summers. Precipitation all year round.		

The CoL operates with three departments, namely, the Departments of Administrative Affairs, Education Services and Urban Environment (Governance, n.d.). Within the Department of Administrative Affairs, a cross-sectoral, operational level master planning working group functions as the responsible body for preparing the master planning documents to be used in the decision-making process. This working group is administered by a cross-sectoral master planning steering group which is in charge of overseeing whether the strategic goals are met by the working group.

The strategy of the city was decided after the merger with Nastola in 2016 and it is articulated as “We are internationally successful as a bold environmental city for people and businesses”. The execution of the city strategy is supported with five transformation programmes having nearly thirty primary goals each (Governance, n.d.).

As seen in Figure 5, the vast majority of Lahti is covered with green areas with imperviousness of approximately 65%. The inner city is densely populated, with 63 inhabitants per hectare while the overall city has the population density of 18 inhabitants per hectare. However, 99% of the citizens live maximum 300 metres away from a green urban area (Sustainable Land Use, n.d.). The built environment (referred as “overall city” in Figure 5) primarily concentrates around the inner city and the rest stretches along the railway on east-west direction.

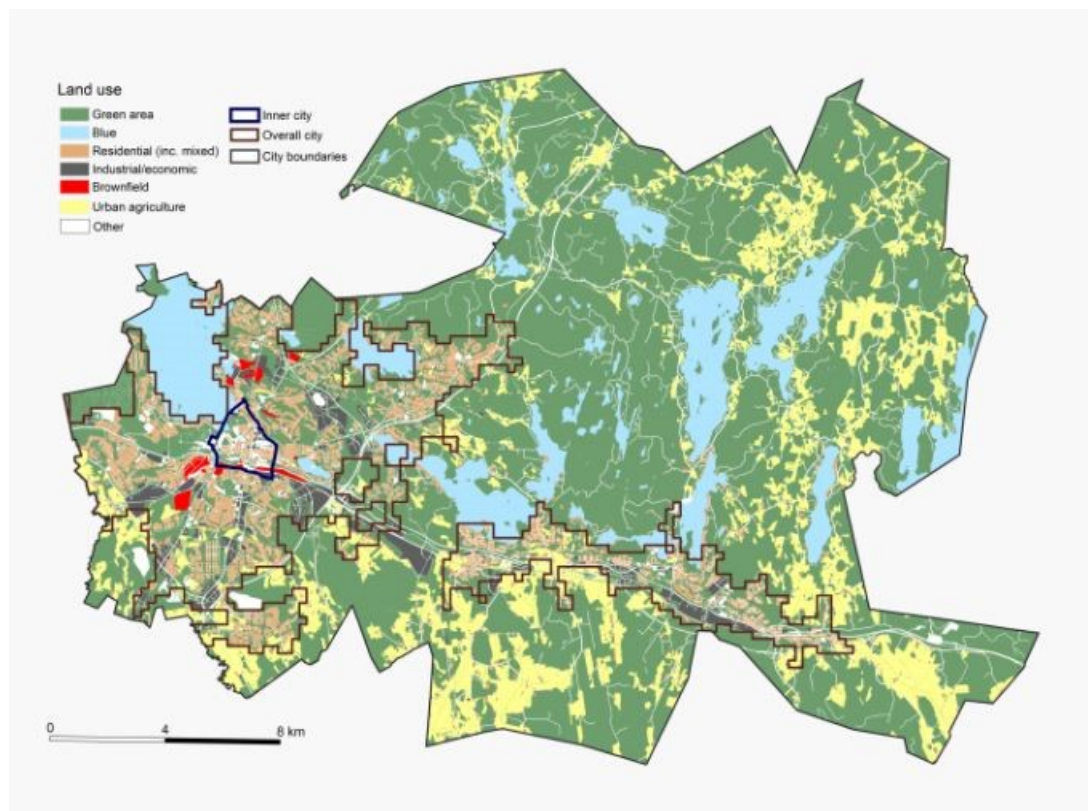


Figure 5. The current land use situation (Sustainable Land Use, n.d.)

The current situation of urban mobility is primarily based on private car (see Figure 6). Half of all journeys under 5 kilometres is made by a private car whereas the share of cycling trips is 14.1% and share of trips on foot is 29.4%. Nevertheless, 82.8% of the

population live maximum 300 metres away from an hourly or more frequent public transport service (Sustainable Urban Mobility, n.d.).

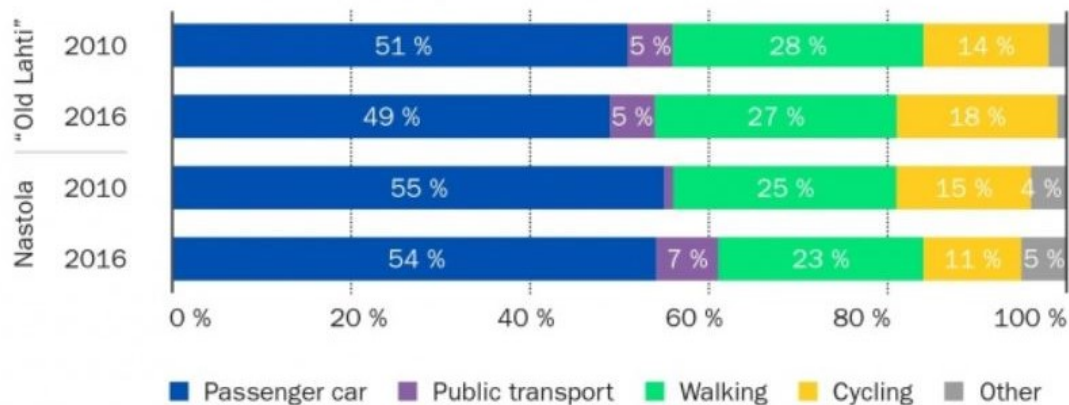


Figure 6. The current modal split. Sustainable Urban Mobility, n.d.

Within the Finnish planning system, the CoL has a continuous local master planning system which ties the 4-year terms of each city council to one cycle of master planning (Sustainable Land Use, n.d.), which is quite unique in Finland as well as in the EU. The rationale of the continuous master planning system is to integrate a long term planning perspective into incremental, short term and adaptive planning operations. The master plan essentially brings together the city strategy with urban and transport planning. The master planning process is concerned with the whole city and is an integrated planning process which takes into account services planning, transport, businesses, and environmental protection alongside with land use issues. As seen in Figure 7, the cycle starts with strategic goal setting and proceeds with drafting of alternatives. The last two years of the process are dedicated to impact assessment and implementation assessment (Sustainable Land Use, n.d.). The continuous planning system is audited by 20 ecological, social and financial measures (Governance, n.d.).

The master planning cycle of 2017-2020 includes the development of a Sustainable Urban Mobility Plan (SUMP – an EU level policy framework for improving the accessibility of urban areas and providing high-quality and sustainable mobility, (the SUMP Concept, n.d.)). The CoL follows a transit-oriented development model with which the city growth is consolidated in the centre and along main public transport routes (Sustainable



Figure 7. The master planning cycle of 2017-2020 in the CoL (Sustainable Land Use, n.d.)

Urban Mobility, n.d.). Especially in the city centre, expansion of high quality bike lanes and sidewalks is planned through redirecting of the car traffic (Sustainable Urban Mobility, n.d.). According to the mobility and city structure goals of the environmental programme, the CoL strives to ensure that 50% of trips shorter than 5 kilometres are done by cycling or walking by 2021. By 2050, they want to achieve a carbon-free mobility with a dense yet high-quality urban environment (Governance, n.d.). The development plan concerning cycling and walking for 2025 strives to change the attitudes of the citizens towards the use of active transport modes, to develop the walking and cycling network infrastructure and to have a dense urban structure with services within walking and cycling distance (Sustainable Urban Mobility, n.d.).

The Land Use and Building Act requires that each municipality has to provide equal opportunities of participation to the citizens:

“The Act also aims to ensure that everyone has the right to participate in the preparation process, and that planning is high quality and interactive, that expertise is comprehensive and that there is open provision of information on matters being processed.” (Land Use and Building Act, n.d.)

Therefore, one of the main pillars of the continuous master planning of the CoL is its emphasis on public participation. The CoL undertakes a variety of public participation processes, ranging from online public participation surveys to workshops in which citizens can find a chance to talk to the city officials face-to-face (Sustainable Land Use, n.d.).

For data management practices, Trimble Locus GIS is utilised as a planning support system in the CoL. Trimble Locus Webmap is used by the city officials only while Trimble Internet Map Services are open to the public. All available data, including the datasets coming from public participation surveys, are stored and made available to the city officials.

4 Change-oriented Design Science Approach

The central pillar of the research approach was to defy the so-called dichotomy of theory and practice, following the idea of an “experiential case study analysis” by Straatemeier et al. (2010). For a practice whose subject matters are becoming increasingly complex, multidimensional and interdependent and thus whose *modus operandi* is constantly being challenged, neither academia nor active practice is able to generate silver bullet solutions on their own. Instead, as argued by Straatemeier et al. (2010), transformative thinking and actions have to emerge out of close cooperation between researchers and practitioners, by accounting for the context of planning, not only in terms of the realities and demands of the planning task at hand but also in terms of institutional practices and traditions in which those planning tasks are handled. Such an interactive approach to planning research lays the foundations of an inclusive research process in which the practitioners are not merely the end recipient of research outputs. This approach allows practitioners to assume the role of a researcher in the process while framing the planning context as well as introducing the institutional realities into the research process.

Looking at the other side of the coin, while actively engaging with the practitioners instead of observing from afar, researchers are able to transcend the boundaries of a descriptive and/or explanatory research process and establish their process as a design science research (Straatemeier et al., 2010). The approach of design sciences seeks to develop new units of knowledge for the design and realisation of artefacts, or to be used in the improvement of the performance of existing entities (Romme 2003; Van Aken 2004; Van Aken 2005; van Aken & Romme 2009); ergo, has an orientation towards change. This is especially crucial given the fact that planning is a future-oriented discipline by nature (Isserman, 1985; Myers & Kitsuse, 2000). Future-orientedness inevitably requires an expansion of the palette of planning research to accommodate for the ever-changing, increasingly complex nature of the “wicked problems” (Rittel & Webber, 1973) of planning for which by-the-book solutions fall short in generating change for a profession in transition.

Another premise of experiential case study analysis is the importance of reflective cycles (see Figure 8) which occur iteratively and covers a spectrum of knowledge generation mechanism between planning practice and planning science (Straatemeier et al. 2010). In this model, each cycle of case study maintains the conditions for experiential learning from research outputs and at the same time, generates the inputs for the following cycle. Going through iterative cycles of experiential learning, both reflection-in-action and reflection-on-action (Schön 1983), bring about planners’ values, conceptions and emotions embedded in specific institutional practices that immensely affect the reasoning behind decision-making processes which often work as a black box process. These reflective cycles also allow the researchers to constantly test their own conceptions, values and habits concerning the research objectives as well as methodological choices.

The research approach employed in this study also recognises the need for contextualised understanding of planning practice. Te Brömmelstroet (2015) contends that planning research should focus on a contextually-specific assessment of underpinnings that make up a specific planning process and related outcomes, rather than a context-free, universal understanding of implications. Therefore, this study follows the idea of a hermeneutic cycle, a term coined by Heidegger (1927, as cited in Scott-Villiers, 2014), through which a whole can be understood in the everyday situatedness of its parts.

This study presents and discusses the findings from the first iteration of a longer research process - partially within Urban Aesthetics in Motion project- and aims at establishing an experiential learning baseline that can form the upcoming steps of the research process in an explorative manner.

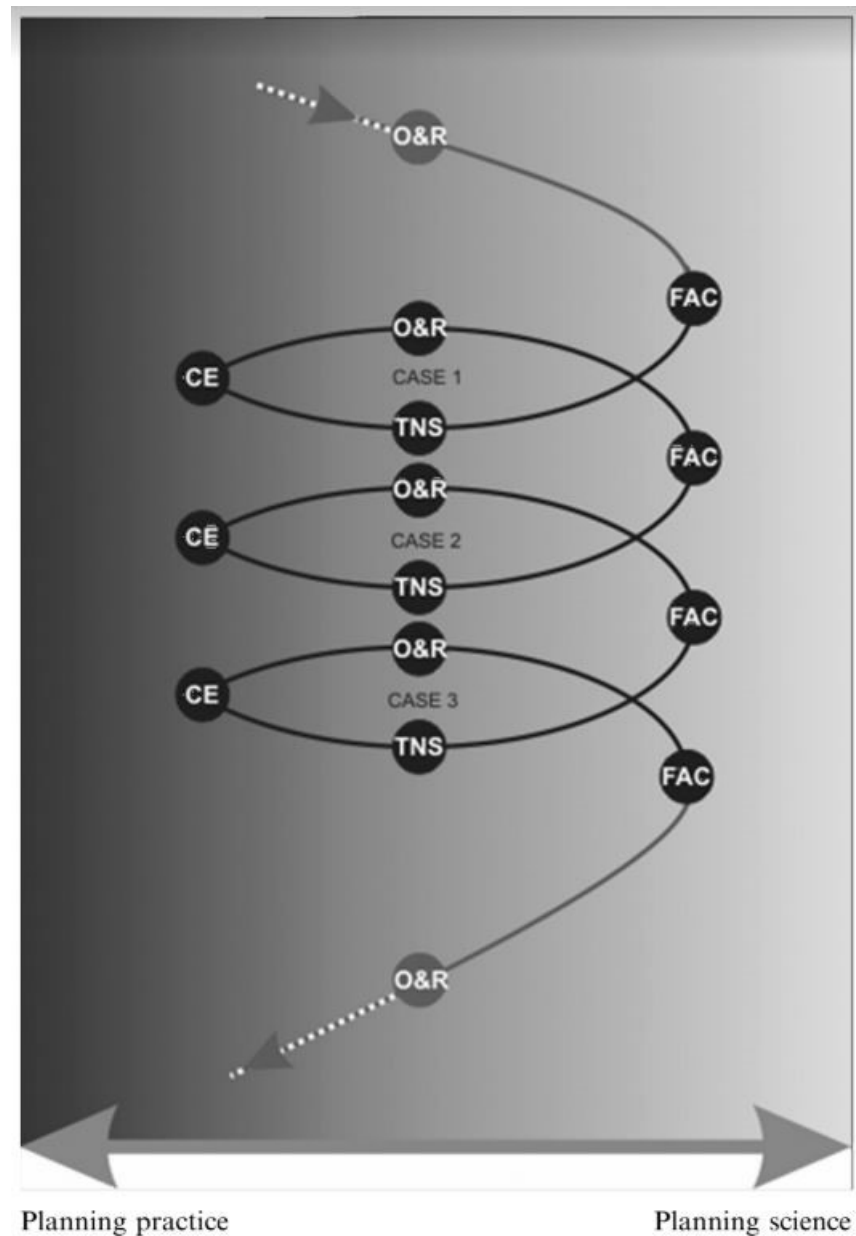


Figure 8. Reflective cycles in experiential case study analysis. O&R = observation and reflection. FAC = forming abstract concepts. TNS = testing in new situations. CE = concrete experience (Straatemeier et al., 2010)

4.1 Overall Research Process

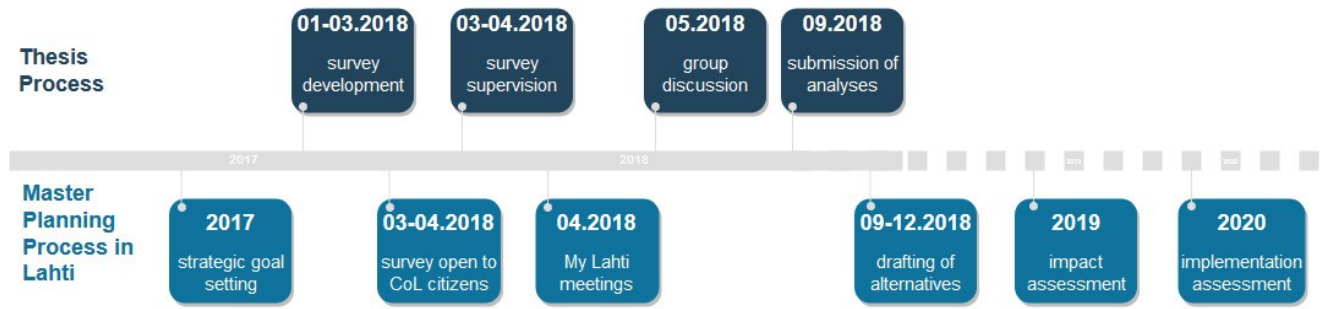


Figure 9. Milestones of the research process.

The overall research process follows the timeline of master planning process in Lahti. Following the goal setting stage in 2017, in 2018 CoL undertakes the participatory planning activities, e.g., My Lahti meetings and online public participation surveys, to collect localised, experiential input to be used in the drafting of the alternatives. As seen in Figure 9, this research covers an eight-month duration in 2018. The process includes the development and execution of an online, map-based public participation survey and a group discussion with practitioners in Lahti about the use and analysis of the survey. The process also includes the spatial analysis of the survey for producing knowledge to be used in the drafting of alternative master plans.

It should also be noted that the focus of this master's thesis is the analysis of the group discussion and exploring the planners' needs, challenges and expectations concerning the use of the collected data through the public participation survey. The spatial analysis process of the collected data, on the other hand, was undertaken by the thesis author separately to be submitted to the CoL. Therefore, the summary of the spatial analysis was included in Section 4.2.1 for data description purposes only, whereas the detailed analysis of the group discussion is presented in Section 5.2.

4.2 Detailed Description of Research Process and Roles and Responsibilities in the Process

In this chapter, the research process is explained in details, focusing on the public participation survey stage and subsequently the group discussion stage. Activities undertaken and actors involved are illustrated in Figure 10.

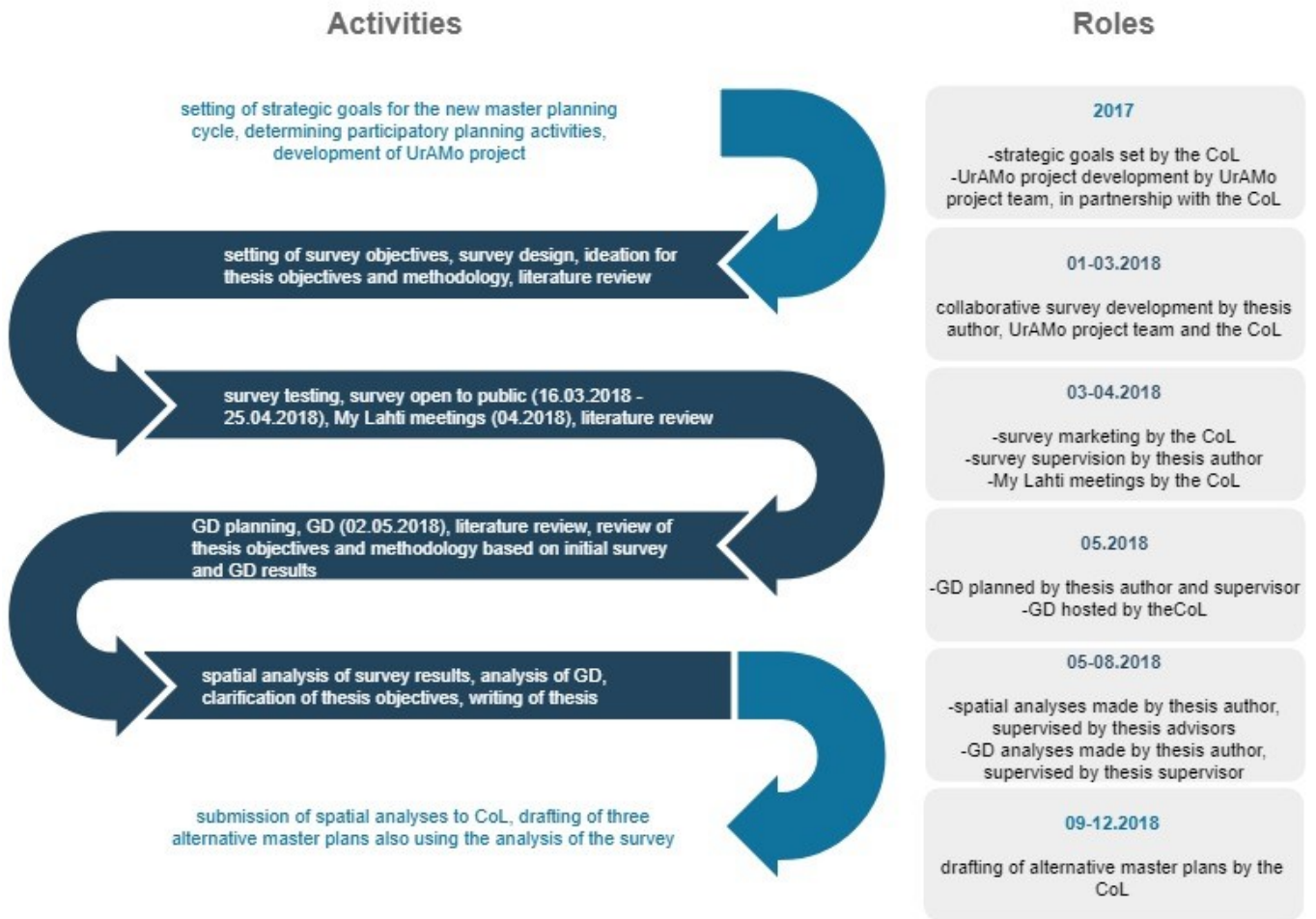


Figure 10. Image of activities and roles of involved parties in the research process.

4.2.1 Survey Development Stage

Objectives

The primary research objective for the survey development was to collect citizens' travel experiences of travelling in Lahti. The secondary objectives were threefold. First of all, the research team aimed at exploring the possibilities of using concepts from the fields of aesthetics to further explicate the experiences with travel by linking them to the context and atmosphere of the travel. Another objective was to coordinate the survey with the parallel public participation activities of the CoL. The My Lahti Workshops (a series of workshops in which citizens can visit the pop-up workshop places to provide their input by using post-its and map drawings or discussing the issues with the planners in person) consisted of two sections, namely, mobility and services. Accordingly, travel experience-daily services connection became a part of the survey. Last but not least, the survey aimed at collecting improvement points respondents would wish for.

The final objective of the survey can be summarised as understanding the current travel experience in Lahti and aesthetic attributes as its constituents, in relation to the everyday services citizens use, and collecting the suggestions for improvements from the citizens. Accordingly, the survey received the title "My Everyday Places and Travel Experience in Lahti (*Arjen Paikat ja Reitit Lahdessa* in Finnish)".

Starting Point for the Survey Development

The Satisfaction with Travel Scale (STS) (Ettema et al., 2011) was taken as a starting point for the survey development. STS is a tool for measuring how people perceive travel in terms of evaluative happiness (cognitive evaluation) and emotional well-being (affective evaluation) (see Ettema et al., 2011; Diener, 1984). STS was developed based on the core affects theory (Russell, 1980; Västfjäll et al., 2002). Core affects are defined to be the building blocks of the current mood or the emotional response of a person which can be explicitly thought about by the person herself (Västfjäll et al. 2002). Although there are myriad of models explicating the dimensions of core affects, the theory essentially contains two primary dimensions, i.e. valence and activation. Valence is described to be the extent of pleasure, ranging between positive and negative, whereas activation is described to be arousal or being energised by environmental stimuli, ranging between activated and deactivated (Västfjäll et al. 2002; De Vos et al. 2015). The theory is based on the idea that it is not possible to feel the two opposite sides of the circumplex (see Figure 11). Therefore, plotting the feelings is possible. For the development of the STS, Friman et al. (2013) argued that when measuring travel satisfaction, both valence and activation should be measured at the same time. Therefore, the STS only contains positive (pleasant) activation – negative (unpleasant) deactivation and positive (pleasant) deactivation – negative (unpleasant) activation adjective pairs for the measurement of emotional well-being.

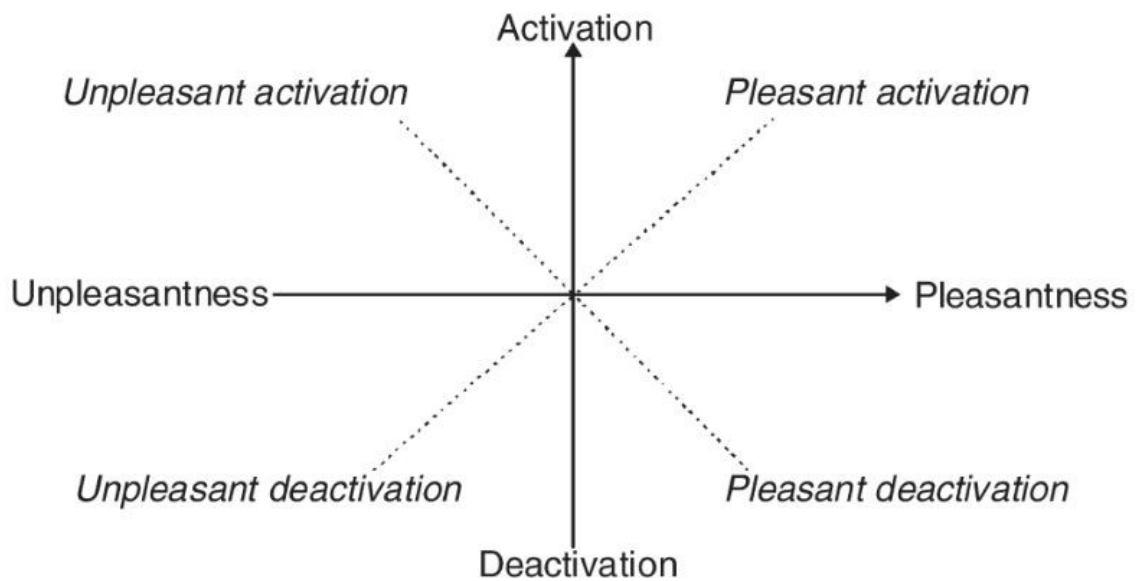


Figure 11. The circumplex model of core affects (Västfjäll et al., 2002)

De Vos et al. (2015) suggested that STS is a valid measure of travel satisfaction, despite of the fact that some adjustments on the items can improve the validity even further. Therefore, in this study the original STS developed by Ettema et al. (2011) was used. Figure 12 shows the base STS used for establishing the main question of the survey asking respondents to evaluate the overall travel experience.

Two dimensions	Three dimensions	Negative	-3	-2	-1	0	1	2	3	Positive
Affective dimension	Positive activation – Negative deactivation	Bored	0	0	0	0	0	0	0	Enthusiastic
		Fed up	0	0	0	0	0	0	0	Engaged
		Tired	0	0	0	0	0	0	0	Alert
	Positive deactivation – Negative activation	Stressed	0	0	0	0	0	0	0	Calm
		Worried	0	0	0	0	0	0	0	Confident
		Hurried	0	0	0	0	0	0	0	Relaxed
Cognitive dimension	Cognitive evaluation	Travel was worst I can think of	0	0	0	0	0	0	0	Travel was best I can think of
		Travel was low standard	0	0	0	0	0	0	0	Travel was high standard
		Travel did not work out well	0	0	0	0	0	0	0	Travel worked out well

Figure 12. The Satisfaction with Travel Scale (De Vos et al., 2015)

The travel experience survey developed for this study incorporated a list of positive and negative aesthetic attributes to the base STS. In doing so, the researchers aimed at using travellers' sensory perceptions of the environment for explicating the affective and cognitive evaluations of the travel.

Timeline

The survey development process took approximately over two months, starting from January 08, 2018. During the survey development stage, the survey language was English only. After the completion of the survey design on March 07; 2018, as the majority of the target respondent group speaks Finnish as a mother tongue, the City of Lahti and the research team collaboratively translated the survey from English to Finnish. Once the survey design and the translations were ready, the testing of the survey took place in the City of Lahti during March 09-12, 2018, with 6 invited test respondents with varying experience with the survey tool, ranging from no experience to extensive experience. The purpose of the testing was twofold: assessing the user-friendliness of the survey structurally and language-wise and checking the data transfer compatibility. According to the feedback collected during the tests, neither structural changes nor content improvements in the survey were deemed as necessary. Only some improvements on the translations were suggested. Afterwards, the survey was made public on March 16, 2018. City of Lahti was in charge of recruitment for the survey. The primary means of recruitment were the webpages of City of Lahti, their official social media channels and My Lahti workshops where the link to the survey was shared with the participants. The survey closed on April 25, 2018.

Participants

The participants of the survey development stage were mainly the UrAMo research team, including the thesis author. The master planning architect from the CoL joined the development meetings twice to coordinate the process with other ongoing public participation activities, e.g., My Lahti workshops, and to share the expectations of the CoL concerning the survey. The interaction planner from the CoL joined the process when the survey was ready to be tested and launched.

Pages

The survey consisted of one welcome page briefly explaining the purpose of the survey and its practicalities with a consent note, five question pages and one final page to submit the survey and to enter the raffle if desired (see Table 2).

Table 2. Summary of the survey pages. — = pop-up question. * = mandatory question. ** = disconnected answers to protect respondent anonymity.

Welcome Page	Question Page -1- Background Information	Question Page -2- Everyday Places	Question Page -3- Routes	Question Page -4- Important Points Along the Routes	Question Page -5- Suggestions	Final Page
Practical information about the survey	Gender	Homes	Routes	A positive experience	A place in need of improvement	Mail address submission for raffle**
Information about the raffle	Age	Workplaces	—Overall evaluation of the travel experience*	—Related transport mode	—Improvement suggestions	Final comments from the respondent
Information about UrAmo	Monthly available household income	Educational institutions	—Purpose of the route	—Positive aesthetic attributes	A route in need of improvement	
Contact information	Higher level of education	Grocery stores	—Transport mode(s) used for the route	A negative experience	—Related transport mode	
Consent note	ZIP code of the home neighbourhood	Places for free time activities	—Frequency of use	—Related transport mode	—Improvement suggestions	
		Sports facilities		—Negative aesthetic attributes	A new connection	
		Health and well-being centres			—Related transport mode	
		Places for other services			—Improvement suggestions	

The logic of the five question pages was so that each question was a basis for the upcoming one, instead of being independent and stand-alone questions. First, after the welcome page, the respondents were asked to provide some personal background information. The idea behind having these questions as the first set of questions was to help the respondents to get into the mindset of the survey by starting with easy and familiar questions. Once the respondent selected the ZIP code of their neighbourhood as the last question of the background information section, the centre of the survey base map was automatically relocated to their neighbourhood with an appropriate scale, which would implicitly indicate that the next question would include questions about their own neighbourhood. Second, following the background information section, the respondents were asked to mark on the map their everyday places such as their homes, workplaces, grocery stores and places for free-time activities. Third, after the respondents had a chance to think about the places they go and orientate themselves on the survey base map, they were asked to draw on the map the routes they take and evaluate the travel experience along those routes. The places marked for the everyday places in the previous question remained visible. Fourth, after the respondents drew the routes they take and thought about how they evaluate the overall experience during the travel, they were asked to mark the

positive or negative experience points along these routes which would have an impact on how they assess the travel experience for those routes. In other words, the respondents were asked to dig deeper in their evaluations of travel experience they provided in the previous page and to share information about what would constitute this travel experience using aesthetic attributes. Fifth, after the respondents thought about their travel experience in terms of “what it is”, the final question asked about “what it could be”. This final question page included three questions asking the respondent to mark a place for improvement, draw a route for improvement and/or draw a route as a new connection needed. Detailed breakdown of the survey can be found in Appendix 1.

Data Description and Summary of Spatial Analysis

The survey received approximately 6500 geocoded responses -including both point data (see Figure 13) and line data (see Figure 14)- provided by approximately 550 survey respondents. Regarding the demographics, 71% of the respondents are female but the distributions of age groups and of education levels are rather balanced. 33.14% of respondents live in the city centre. However, over half of all point data are marked within the city centre (see Figures 15 and 16). Walking is the transport mode with the highest number of both positive and negative experience markings. Similarly, public transport is the one with the lowest number of both positive and negative markings. For positive experiences, the most frequently chosen aesthetic attribute is “beautiful”, while “raw” is the least frequently chosen. For negative experiences, “unpleasant” is the most frequently selected aesthetic attribute and “out-of-date” is the least frequently selected.

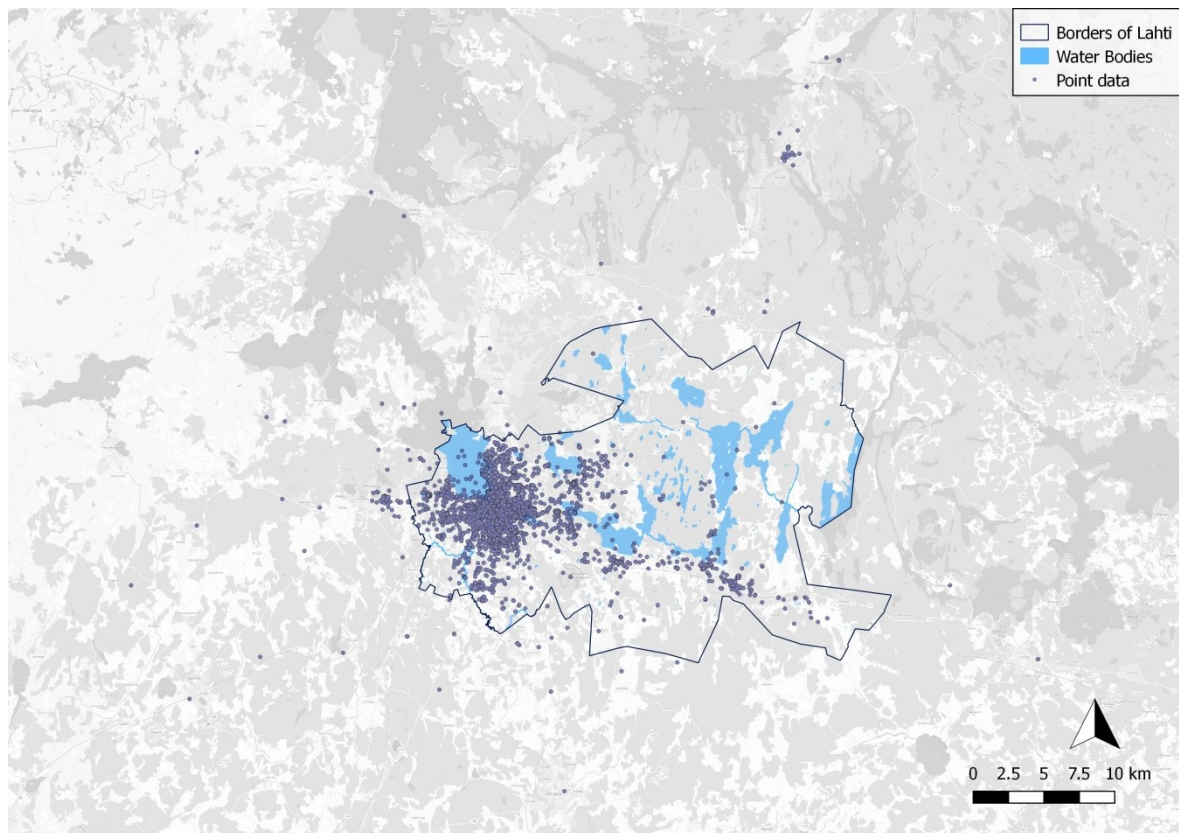


Figure 13. All point data.

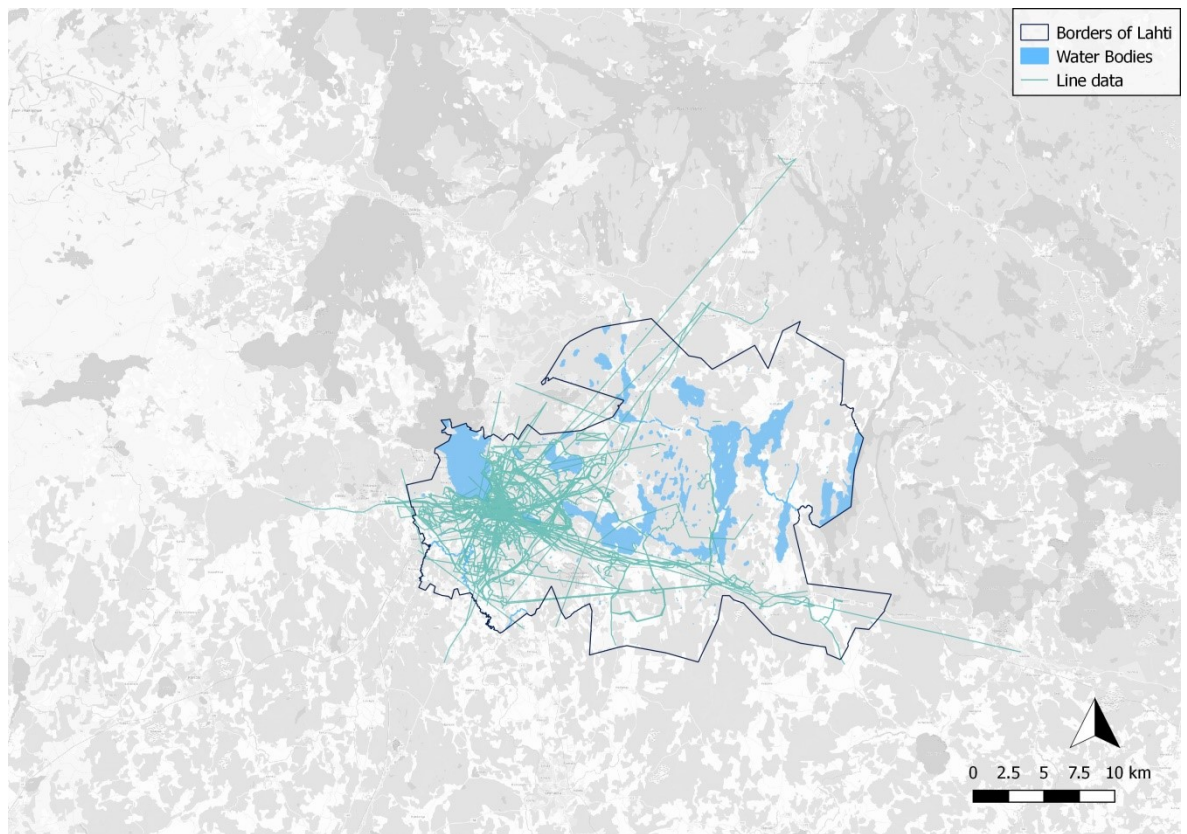


Figure 14. All line data.

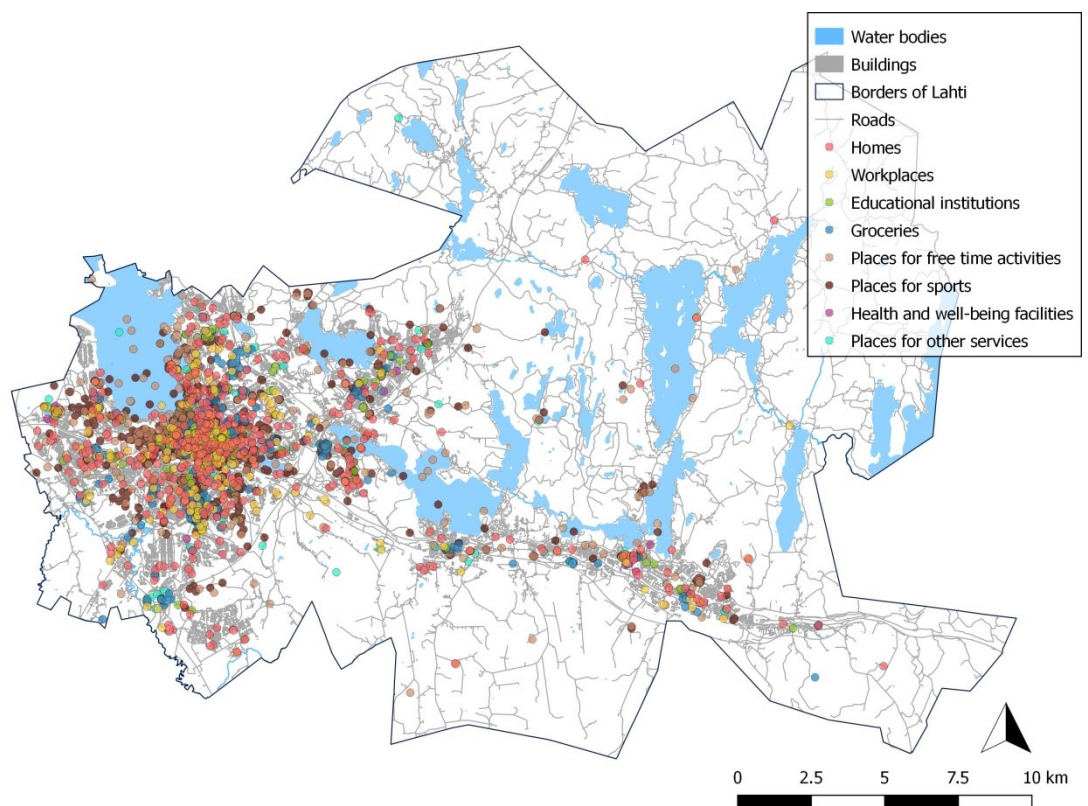


Figure 15. Everyday places within the city borders.

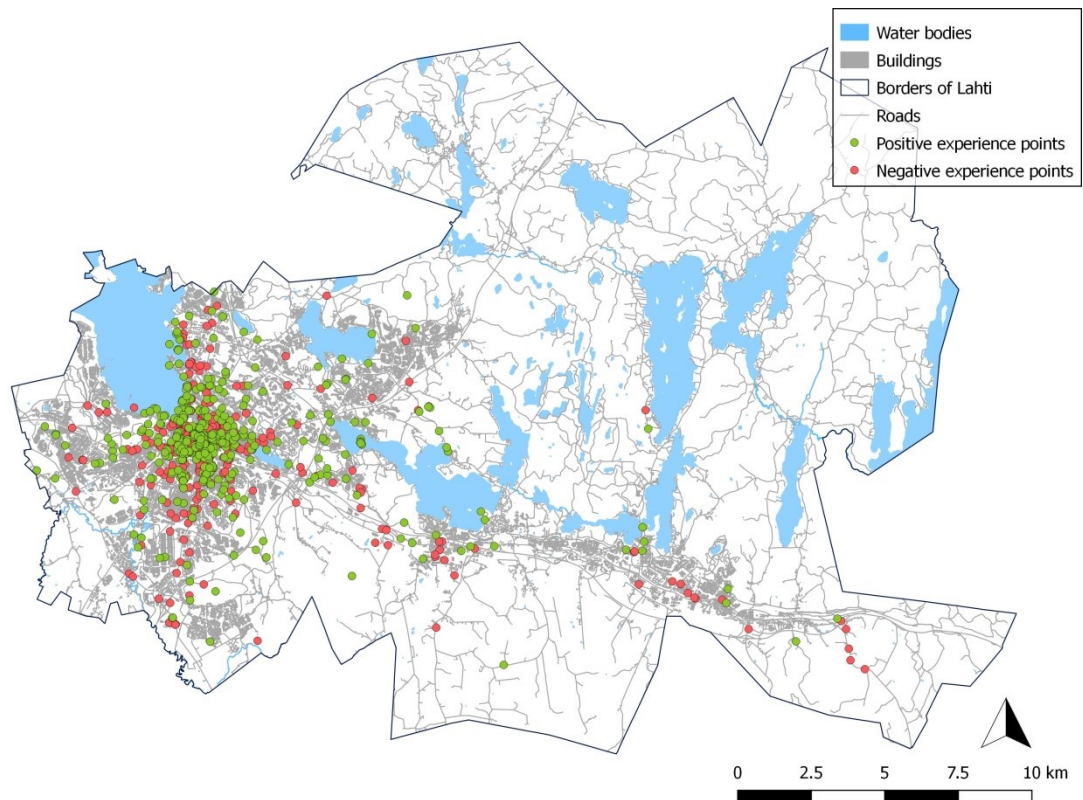


Figure 16. Positive and negative experience points within the city borders.

4.2.2 Group Discussion Stage

Objectives

The research objective for the group discussion was to collectively explore the knowledge interests of the planners in Lahti about the analyses and use of the survey, in connection with their planning tasks. By doing so, it was expected that practitioners' individual conceptions of the citizens' experiential input can be brought up to reach a mutual group understanding through the interaction of the group discussion participants. In other words, as the expansive learning theory suggests, participating practitioners were to collectively create what needs to be learnt and thus, learn during the course of the group discussion.

Starting Point for the Group Discussion

As Flick (2014) points out, the artificiality of the structured interview context and the isolation of the interviewee from her daily interactions are the main points of criticism for the conventional individual, structured interviews. As a response to these limitations, focus groups have been employed by social scientists since 1920s (Morgan, 2011). Morgan (2011) defines focus groups as a qualitative research method which is based on the interaction among the group members within a topical framework defined by the researchers functioning as moderators. The main premise of focus groups is that group interaction is the primary data production source in a context that is an approximation of the everyday life for the group members. The collective wisdom emerging in a focus group environment would be less likely to be attained in an isolated one-to-one, structured interview.

Both Morgan (2011) and Flick (2014) adopt a wider notion of focus groups and utilise the focus groups as an umbrella term. They refrain from strict definitions as well as rules concerning what makes a focus group as Morgan (2011) argues that the critical factor for establishing a focus group framework should be the research objectives, research context and interest of the focus group members towards to research topics. Flick (2014) categorises the umbrella term of focus groups into three types for the sake of method discussion: group interviews, group discussions and focus groups. According to this categorisation, group discussions differ from their counterparts in terms of their source of discussion stimuli and steering the expansion of the discussion. In a group discussion, discussion itself propels, inspires and guides the development of the arguments and opinions presented within the discussion. In this case, the role of the moderator is limited to ensuring that discussion develops fluently on its own and within the topical framework, through occasional steering of the topic and the group dynamics.

The rather free flow of the group discussions was well fitting to the purpose of the research on the grounds that a collective learning session could be established with the practitioners reflecting and sharing freely.

Timeline

Even though having a group discussion with the practitioners was on the research timetable from the early stages, the actual planning started on April 5, 2018, with a short meeting with the master planning architect. On the said meeting, the date of the group discussion was set for May 2, 2018 which was the date for the upcoming monthly meeting of the master planning working group. Another meeting was held in Lahti on April 17, 2018 with the master planning architect and the interaction planner to go through the discussion themes and practical details. On the following day, April 18, 2018, the last preparatory meeting was held to discuss the potentials, challenges and limitations of a group discussion as a qualitative research method. Finally, the group discussion was held in the premises of the CoL on May 2, 2018.

Participants

The participants of the planning phase of the group discussion was thesis author, thesis supervisor, a researcher with extensive experience with qualitative research methods, and the master planning architect and the interaction planner from the CoL.

Regarding the participants of the group discussion session itself; joining the monthly 2-hour-meeting of the master planning working group for the group discussion was an ideal setting for the research objectives. Selecting a natural group, i.e., a group that exists in everyday life, was especially beneficial as the group already has a shared history of master planning process and developed organisational values and practices. In order to expand the learning capacity for the organisation, practitioners who were not originally members of the master planning working group but work with the members daily were also invited to take part in the discussion. The extra participants were selected to form a heterogeneous group which consists of varying backgrounds in terms pertinent to the topical framework of the research (Flick, 2014). 20 of the invited practitioners accepted the invitation. The final list of participants was slightly different than the original list due to last minute cancellations and replacements. The final list consisted of 16 practitioners. The group was complemented by two researchers one of whom is the author of this thesis.

As seen in Figure 17, the majority of the practitioners works in the Department of Urban Environment while the remaining work in the Department of Administrative Affairs. Figure 17 also shows the responsibilities of the practitioners whose titles are adjusted in order to protect to anonymity of the practitioners. Seven practitioners originally belong to the master planning working group, denoted by “*” in Figure 17. Eighteen group discussion participants are divided into five groups of professional backgrounds, namely, planning professionals, transport professionals, services planning professionals, data management professionals and researchers (see Figure 18).

Adjusted Title	Department	Adjusted Title	Department
Transportation project manager	Dept. Of Urban Environment	Forest planner	Dept. Of Urban Environment
Transportation planner*	Dept. Of Urban Environment	Nature conservator*	Dept. Of Urban Environment
Transportation planner	Dept. Of Urban Environment	Interaction planner*	Dept. Of Urban Environment
Public transportation planner	Dept. Of Urban Environment	GIS engineer	Dept. Of Urban Environment
Foreman of transportation constructions	Dept. Of Urban Environment	Master planner*	Dept. Of Administrative Affairs
Land use project manager	Dept. Of Urban Environment	Planner*	Dept. Of Administrative Affairs
Landscape architect*	Dept. Of Urban Environment	Planner*	Dept. Of Administrative Affairs
Urban planner	Dept. Of Urban Environment	Services planner	Dept. Of Administrative Affairs

Figure 17. Adjusted titles and departments of discussion group participants, excluding researchers. * = member of master planning working group.



Figure 18. Number of discussion group participants by professional background.

For the facilitation of the discussion, one of the practitioners assumed the role of the primary facilitator and the researchers were mostly observing, which was a rather unconventional choice for a group discussion or any type of focus groups. The reason to have one participant both as a facilitator and a participant was to ensure that the discussion dynamics would be as close as possible to the original meeting setting.

Discussion Themes

In order to provide a topical framework for the group discussion, three main discussion themes were pre-set, namely, analysis of collected data, conflicts and communication of results. These themes were decided together with the master planning architect and the interaction planner of the CoL.

During the discussion session, each theme was explained via showing questions related to each theme on a display. Nevertheless, participants were not directly asked to answer those questions. Instead, they were reminded of that the questions seen on the display can help them think. In other words, those questions were only utilised to support the participants through soft topical steering.

Detailed breakdown of pre-set discussion themes can be found in Appendix 2.

5 Findings

In this chapter, findings from the research process are explicated in a holistic manner. Not only the outcomes of the research activities are presented but the decision-making process of the research activities themselves is also explained. In doing so, the purpose is twofold. First, by clarifying the lessons learnt pertinent to the operationalisation of citizens' participatory experiential input in an integrated planning process, the repertoire of planning practice can be enriched with a systemised knowledge generation process. Second, by unravelling the challenges faced, compromises made and decisions put forth throughout the research process; experiential knowledge basis for the upcoming iterations of the larger research process can be laid out.

Findings in this chapter are presented in the form of themes categorised under two main sections, namely, findings from the survey development process and findings from the group discussion.

5.1 Findings from the Survey Development Process

In this section, findings from the survey development process are presented under four thematic categories which concern core affects theory and aesthetics, the interdependency between research objectives and survey user-friendliness, understanding of routes in relation to their origins and destinations and effect of languages in survey development.

5.1.1 Core affects theory as the backbone of the survey design and the role of aesthetic attributes

Following core affects theory; the survey was structured in a manner that the respondents would be step-by-step asked to reflect upon their core affects evoked by the travel activity. In the first stage, following the first question about the background of the respondents and the second question about everyday places of the respondents, the third question asked the respondents to draw their daily routes in Lahti. This question contained a follow-up question probing the overall travel experience which was structured to include a compact version of the STS shown in Figure 12 (see section 4.2.1). (for details of how the question was visualised, see section 5.1.2).

Similarly, in the second step, the fourth question asking respondent to decompose the overall travel experience with the help of aesthetic attributes also followed the idea of having three complementary dimensions. In this case, aesthetic attributes were employed to further scrutinise the affective dimensions. In order to do so, this question was simplified and structured (for details of how the question was visualised, see section 5.1.2) to ask the respondent to contemplate about the positive and negative experiences along the route(s) she has drawn in the previous question.

Two separate lists of positive and negative aesthetic attributes were produced to be included in the fourth question. For choosing the sets of which aesthetic attributes to be included in the survey, four criteria were applied. These four criteria stemmed from the core affect scales consisting of both cognitive and affective evaluations, theories of aesthetics taking into account a wide spectrum of sensory responses between the person and the built environment and also, earlier studies of travel experience emphasising or

lacking a focus on the implementation value of travel experience evaluations. Last but not least, the criteria were also framed by the considerations for a user-friendly survey design.

The most decisive criterion was that the chosen attributes had to be easy to understand for the respondents. Therefore, attributes such as “coherent” or “legible” were excluded from the final list. Second, the list had to include attributes of different senses as well as about the atmosphere/context of the travel, instead of focusing primarily on visual aesthetics, due to the vast amount of studies solely accounting for urban beauty. Accordingly, the lists included attributes pertinent to visual-atmospherics, e.g., gloomy, or relational reactions, e.g., rich. Third, the attributes had to be actionable so that practitioners would be able to respond to them with feasible planning operations or policies. The selection process of these actionable features was a rather black-box process. The tacit knowledge of the researchers and the involving practitioner pertaining to what makes an aesthetic attribute “actionable” or “non-actionable” was not explicitly discussed but was revisited during the group discussion (see section 5.2.3). Finally, the aesthetic attributes had to be as “raw” as possible without further interpretations so that they could be used to scrutinise the overall travel experience. By avoiding conclusions or psychological reactions (e.g., safety or stressful) towards the initial aesthetic responses (e.g., clean or noisy), it was aimed that the responses could provide the root causes of the travel experience evaluations from the previous question.

5.1.2 Trade-offs between the research agenda and the user-friendliness of the survey

One of the central challenges of voluntary participation is the inverse proportion between the number of survey respondents and the survey complexity and length (Brace, 2018; Krosnick, 2018). On one hand, the survey had to be easy to understand and fast to respond by the respondents without falling into a respondent fatigue. On the other hand, it had to be ensured that the data needed to answer the research questions would be collected in a suitable format for the future analyses. Consequently, the research team had to decide on several trade-offs between the research needs and user-friendliness of the survey.

During the survey development process, it was pointed out from earlier research experience that having mandatory questions in the surveys is generally frowned upon by the respondents. Therefore, the only mandatory question in the whole survey was the follow-up question about the overall travel experience along a route –the most important question of the survey-, appearing only if a respondent has drawn a route in the third question. In line with the STS (see section 4.2.1), there were different proposals for how the different dimensions of core affects could be asked for the mandatory overall experience pop-up question following the route drawing. As shown in Figure 19, one option was to include seven separate sliders (one for cognitive dimension and six for affective dimension pairs) indicating a range for each. Another option was to use a 5-level Likert scale ranging from complete disagreement to complete agreement on three rows of core affects (one for cognitive dimension and two for affective dimension pairs). The final decision was adapted from Figure 12 (see section 4.2.1) to include three sliders as shown in Figure 19. One slider was for the cognitive dimensions whereas the other two were for affective dimensions (positive deactivation - negative activation and positive activation - negative deactivation) of the overall travel experience of the drawn routes. The rationale behind the choice was to reduce the number of questions in total to avoid respondent

fatigue, even though the question style reduced the number of possible statistical or spatio-statistical analyses.

My routes in Lahti

How do you rate the overall travel experience along the route?

Travel worked out poorly and was of low standard. —●— Travel worked out well and was of high standard.

How did you feel during the travel?

Bored —●— Enthusiastic

Fed up —●— Engaged

Tired —●— Alert

Stressed —●— Calm

Worried —●— Confident

Hurried —●— Relaxed

How do you rate the overall travel experience along the route?

	Completely disagree	Disagree	Neutral	Agree	Completely agree
Travel worked out well and was of high standard.	○	○	○	○	○
I felt very relaxed, confident and calm.	○	○	○	○	○
I felt enthusiastic, alert and engaged.	○	○	○	○	○

My routes in Lahti

How do you evaluate your overall travel experiences along the route?

The trips work poorly, are of low standard and worst imaginable. —●— The trips work well, are of high standard and best imaginable.

I feel very bored, fed up and tired. —●— I feel very enthusiastic, alert and engaged.

I feel very stressed, worried and hurried. —●— I feel very relaxed, confident and calm.

Figure 19. Proposed versions of the mandatory question about overall travel experience. Upper left = Option with seven sliders. Upper right = Option with a Likert-scale. Bottom = Chosen option with the three sliders.

A similar trade-off occurred for the fourth question further probing the travel experience with the use of aesthetic attributes. The research team developed several options for the question asking about the experiences along the routes through different ways to decompose the travel experience through aesthetic responses. One option was to have one single point button, with a pop-up follow-up question asking respondents to select attributes divided into three groups based on visual, auditory and tactile senses. The second option was to have six separate point buttons (two for positive or negative auditory senses, two for positive or negative visual senses and two for positive or negative tactile senses), each followed by a set of related aesthetic attributes. The third alternative was to have three points button for only positive experiences for three different senses (auditory, visual and tactile) to be chosen and to have a similar set of negative experiences in the following page, in connection with suggestions for improvement. The final and chosen option was to have two drawbuttons for positive and negative experiences, followed by pop-up questions asking the respondent to pick the respective aesthetic attributes from a twelve-item list, as shown in Figure 20. With concerns for respondents getting overwhelmed with too detailed questions of separate senses, the research team decided to proceed with this option which contains only two drawbuttons in the main body of the question, as it was the most user-

friendly option. However, this choice raised concerns regarding the risk of respondents primarily selecting aesthetic attributes pertinent to the visual senses. The main reason why other options with separate senses were proposed was to help respondents to consider not only the visual side of their environment but also other aesthetic responses such, as auditory attributes. Therefore, choosing a categorisation based on only positive and negative experiences increased the risk of respondents selecting mostly visual attributes. On the other hand, this choice also increased the likelihood of reaching a higher number of answers and thus, better sample representativeness.

4/6 Any important points along these routes?

Please, think about the routes you have drawn in the previous question. Can you think of any important point that has an impact on your travel experience along these routes?

These points can be related to anything: a building, a store, a tree or even an empty lot!

Using the buttons below, please show us where these points are. You can pick which button to use based on if the point has a positive or negative impact on your travel experience.

A positive experience along your routes
You can mark as many points as you wish!

A negative experience along your routes
You can mark as many points as you wish!

Please mark the point(s) as accurate as possible. If you do not remember the exact location, you can mark an approximate location.

A positive experience along your routes

Is a transport mode related to this experience? If yes, please select all the modes that apply.

- ☐ Walking
- ☐ Cycling
- ☐ Public transport
- ☐ Taxi
- ☐ Private car

If other, please specify:

Please pick all the adjectives that help you describe your experience.

- ☐ raw/edgy
- ☐ mysterious
- ☐ rich
- ☐ serene
- ☐ silent
- ☐ scenic
- ☐ beautiful
- ☐ clean
- ☐ cozy
- ☐ trendy
- ☐ impressive
- ☐ spacious

If other, please specify:

A negative experience along your routes

Is a transport mode related to this experience? If yes, please select all the modes that apply.

- ☐ Walking
- ☐ Cycling
- ☐ Public transport
- ☐ Taxi
- ☐ Private car

If other, please specify:

Please pick all the adjectives that help you describe your experience.

- ☐ out-of-date
- ☐ ugly
- ☐ boring
- ☐ bleak
- ☐ scarce
- ☐ chaotic
- ☐ noisy
- ☐ crowded
- ☐ unpleasant
- ☐ smelly
- ☐ messy
- ☐ gloomy

If other, please specify:

Figure 20. Chosen version of the question about positive and negative experiences along the routes. Upper = Main body of the question. Lower left = Follow-up question with positive aesthetic attributes. Lower right = Follow-up question with negative aesthetic attributes.

5.1.3 Conceptualisation of travel experience with(out) an origin and a destination

Other trade-offs than those concerning the user-friendliness of the survey also came up between the approaches the researchers and the practitioners have. The most notable one was about the researchers and the practitioners having different interests to study the same object. In particular, the interest of the researchers focused on the travel experience along a route, while the interest of the practitioners was to link the routes to certain origins and destinations.

Structuring the survey around the idea of a route itself, rather than from which point the route starts and at which point it ends, was an essential decision made in the early stages of the survey development. The initial idea the researchers had was to open up the possibilities for the respondents to freely reflect upon the travel experience along a route of their own choice. Nevertheless, in order to unfold the purpose of the route, a pop-up question following the route drawing was added. However, in the later stages, practitioners argued that routes cannot be fully understood without giving reference where citizens come from and go to while taking those routes. They asserted that everyday places of the residents should be asked in the survey. The controversy between the researchers' and practitioners' conceptualisations of travel experience along routes was addressed by carefully constructing the question description. The description excluded any reference to any kind of origin-destination pairs and asked the respondent only to think about the routes they take. In the meanwhile, the everyday places marked by the respondent in the previous question remained visible on the map, in anticipation that respondents would consider more than their commuting routes. This also allowed respondents to decide the routes they find personally significant but still keeping in mind the everyday places they go to. Accordingly, the question settings allowed the respondents to draw as many routes as they wish.

During the group discussion, the topic was revisited after the public services professional made a comment about the relationship between transport and public services provision and improvement (see section 5.2.8).

5.1.4 Adapting planning theories in English for planning practices in Finnish

The original language of the survey was English due to English being the working language of the research team. During the translation of the survey from English to Finnish, semantic nuances between the two languages necessitated a revision of the chosen aesthetic attributes. At the core of these nuances was that the chosen English words would not encapsulate the same intended meaning when directly translated to Finnish. Therefore, adjustments favouring the Finnish language had to be made as Finnish was the native language of the majority of the target respondent group and thus, the decisive language. To illustrate, the attributes "raw/edgy" and "mysterious" were included in the list of positive attributes rather than that of negative, due to the positive connotations of those words in the Finnish language. Similarly, the Finnish words corresponding to English words "gloomy" and "bleak" were substantially different each other in meaning that the English versions also had to be kept as they were, even though the difference between "gloomy" and "bleak" in English is quite trivial.

5.2 Findings from the Group Discussion

In this section findings from the group discussion are presented. Following the description of interactions between the participants, the main themes of discussion which developed during the group discussion will be explicated (see Appendix 2 for discussion themes set prior to the group discussion).

According to Figure 21, almost half of all contribution to the discussion came from the planning professionals who account for the one third of all participants. Further explained in Figure 22, the interactions between the participants were unbalanced. While one participant (P81, planning background) was substantially more active than all the others; only five participants (P26, data management background; P88, data management background; P52, services background; P84, planning background and P79, research background) out of eighteen participants in total were engaged in the discussion on secondary levels. The remaining participants' engagement levels ranged from non-existent to very limited. Transport professional engaged only on tertiary levels or did not engage at all. Only data management and research professionals showed full engagement while one participant from each remaining sector has remained inactive throughout the group discussion.

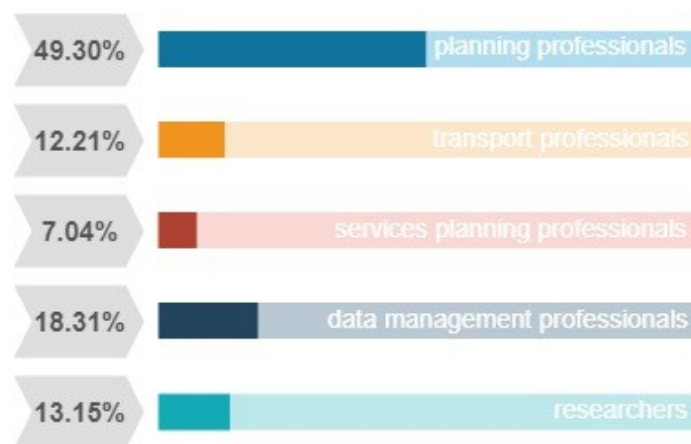


Figure 21. Percentages of statements made by professional backgrounds.

Figure 22 visualises the strength of interactions between participants and each participant's relative level of engagement, i.e., activeness, within the group discussion. The strength of interactions between two participants is denoted by the weight of line which connects the participants. In the calculation of the lineweights, the number of interactions between pairs of participants, i.e., a statement made by one participant and addressed to another, was taken a basis. On the other hand, each participant's relative level of engagement with others throughout the group discussion is denoted by the proximity of each participant to the geometric centre of the circles. The sizes of symbols representing each participant are also sensitive to the participant's level of activity. It should also be noted that while calculating the number statements, facilitation-related statements, e.g., facilitator asking a participant to share her opinion, are excluded.

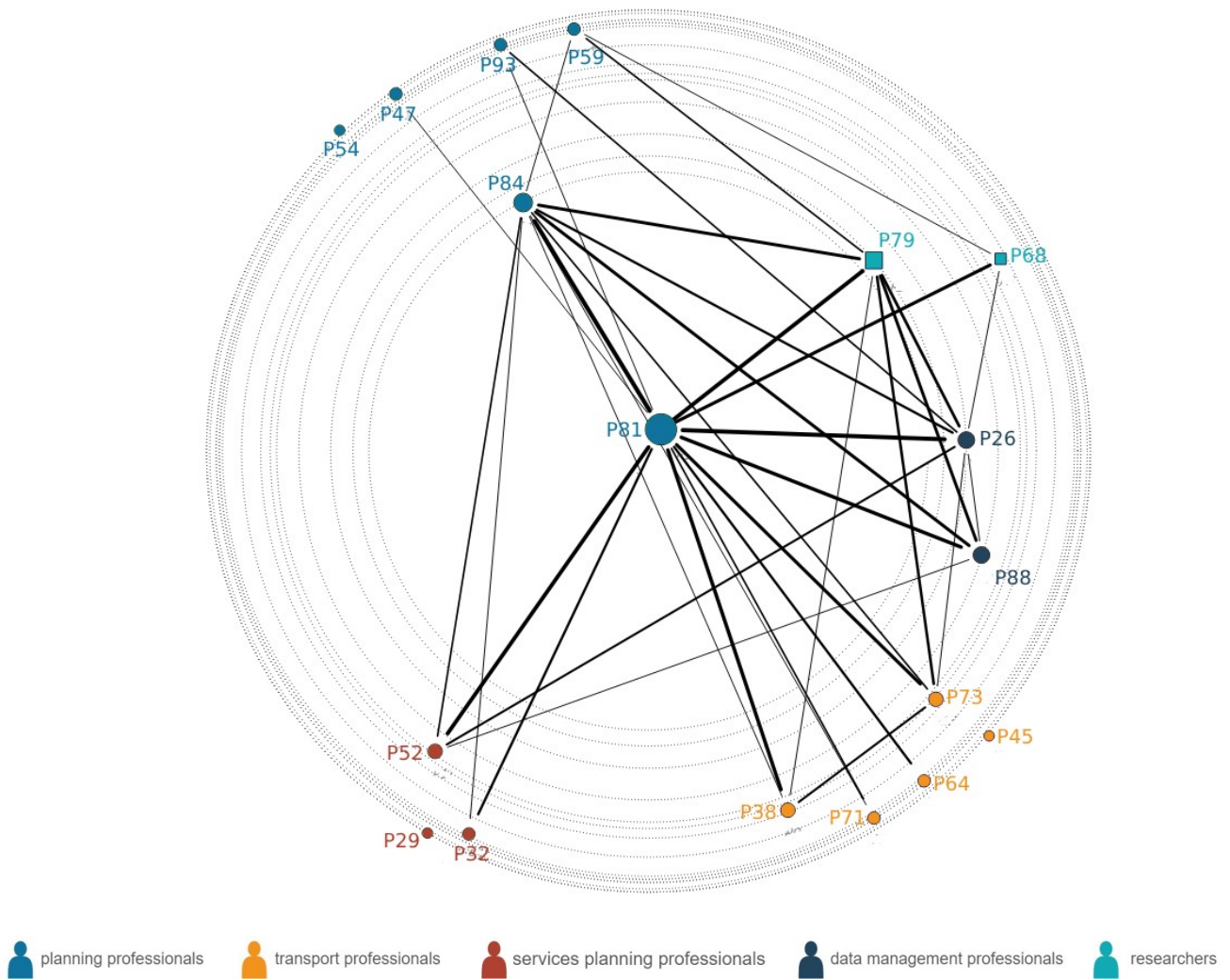


Figure 22. Diagram showing the relationships between group discussion participants. The closer to the centre, the more active and interactive the participant was.

In general participants displayed a positive attitude towards the implementation of citizens' travel experiences into planning. Overall, the number of statements signalling a positive attitude was three times as much the statements signalling negative attitude. However, the specificity of the negative statements was substantially higher than the positive ones. Negative statements were mostly about the already established adverse preconceptions about citizens' participatory input in general or hypothetical problems they thought they would experience if they would use the inputs. On the other hand, positive statements were mostly about the potential use cases and experimental analyses, such as data containing new points of views that the practitioners have not thought earlier. In those comments, the predominant expectation from the dataset is that the citizens' travel experiences directly inform the planning practice by providing insights about concrete planning actions.

The themes that developed during the group discussion are grouped into seven categories:

- Theme 1. Usefulness of citizens' experiences with travel
- Theme 2. Usability of citizens' experiences with travel and data management practices in the CoL
- Theme 3. Analysis needs of practitioners

- Theme 4. Reliability of citizens' experiences with travel collected through an online, map-based survey
- Theme 5. Reasons for practitioners' interest in conflicts
- Theme 6. Connections between land use, transport, services and housing through citizens' experiences with travel
- Theme 7. Survey design

As shown in Figure 23, 35.87% of all statements is about theme 2 (usability of citizens' experiences with travel and data management practices in the CoL) and 25% is about theme 1 (usefulness of citizens' experiences with travel). The remaining five themes only account for the 40% of all statements. Figure 23 also visualises the distribution of total number of statements within themes according to professional backgrounds. Overall, only planning professionals provided their opinions for all themes. Except theme 3 (analysis needs of practitioners), planning professionals provided the highest percentage of statements for all themes. For theme 3, researchers contributed the most. On the other hand, the transport professionals did not contribute to theme 4 (reliability of citizens' experiences with travel collected through an online, map-based survey), theme 7 (survey design) and theme 5 (reasons for practitioners' interest in conflicts) at all. Similarly, services planning professionals did not contribute to theme 4 and theme 7 at all.

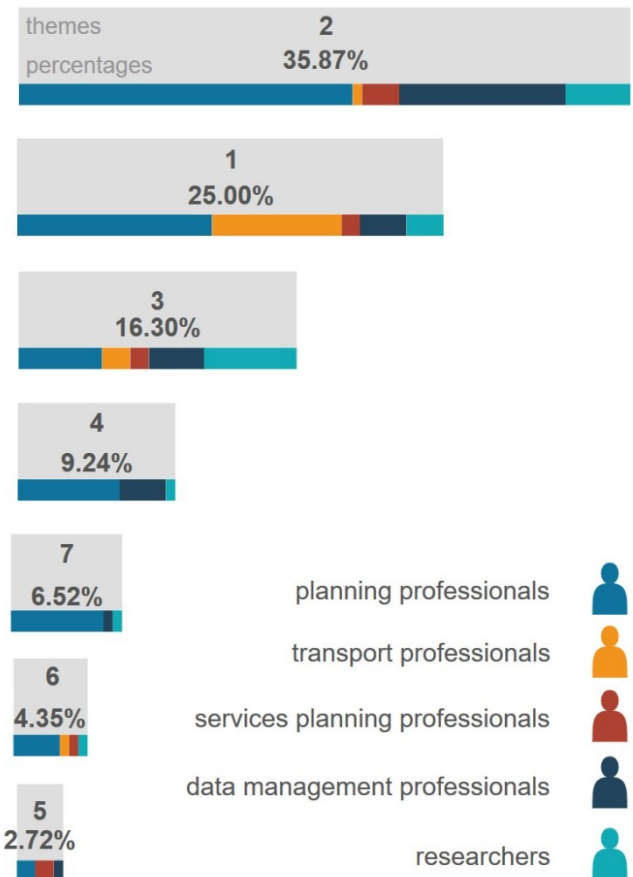


Figure 23. Percentages of total number of statements by theme and distribution of total number of statements within themes by professional backgrounds.

The interaction matrix which contains the number and direction of interactions between participants can be found in Appendix 3. A detailed visual breakdown of interactions between participants during the whole group discussion can be found in Appendix 4.

5.2.1 Usefulness of citizens' experiences with travel

The primary expectation that the practitioners had for the use of the survey was to identify potential directions for planning operations that can be followed based on the knowledge acquired from the collected responses. The potential use cases defined by the practitioners are as follows, in the chronological order in which they are brought up in the group discussion:

- conflicts to be used for showing that citizens have different opinions

- conflicts as sources for new points of view and insights for services planning and improvement
- finding the needs about existing routes
- suggestions for new routes
- identifying ways for planners to preserve or improve the places with positive experience markings
- identifying ways for planners to improve routes based on negative experience markings
- identifying places that the CoL can actually operate in to improve the conditions
- identifying feasible actions that the CoL can actually take to improve the conditions
- learning from mistakes, i.e., negative experience markings, and not repeating those mistakes
- improving the conditions of active travel in order to promote active and sustainable travel modes
- checking correspondence between the urban zones data (a dataset classifying the city sections based on the predominant transport mode) the survey data
- seeing people's motives for transport mode choices or route choices
- identifying needs for traffic safety, from an experiential point of view
- identifying places for new housing or finding ideas about urban renewal needs
- for management of different services, e.g., forest management
- justifying the concentration of resources to certain areas, e.g., city centre
- checking if everyday services that residents use concentrate on large supermarket areas or on local services
- improving the mobility system and services together
- confirming the hypotheses of the practitioners, e.g., driving to a shopping mall to do grocery shopping being a negative experience
- checking the differences between the experiences of car drivers and of active mode users
- identifying trends over time through longitudinal studies, e.g., changes in the most problematic areas
- confirming that changes made by the CoL are well received or checking if there are new problems after changes
- marketing the actions of the CoL by sharing the results of the survey
- identifying tasks based on the population group that will get affected by the task the most; e.g., giving more weight to the responses of young people for the planning of a school campus

The potential uses of citizens' travel experiences vary in planning scale as well as in the potentiality of the input to be used directly for a planning operation. In terms of planning scales, practitioners indicated that citizens' travel experiences can inform detailed plans, for example, by bringing about the improvement needs of existing routes, as well as larger scale, city-wide plans, such as for identifying places for new housing. Similarly, in terms of whether the input can be used directly to devise a specific planning operation or indirectly in other tasks of CoL as a city-wide organisation; practitioners suggested several direct use scenarios, e.g., identifying suggestions for new routes, as well as indirect use scenarios, e.g., checking the satisfaction level with already implemented planning operations.

One practitioner pointed out that the most useful input that the practitioners can draw out of this dataset is to figure out what should be enhanced, preserved or changed in the built environment by looking at the positive and negative experience points:

I think the original.. sort of research question that I wanted an answer to was that when we find out where people move, we'd like to know what kind of experiences they have along those routes so that we could find out what positive and negative things there are in any route that you pick to answer. Then you answer the sort of emotional feelings that you experience along that route. And then, from those, it would be interesting to get at points where... What is good already about the environment and how is it possible for us to either enhance or preserve it? And then, what is there that we can improve to make the routes better where people have negative experiences? So, that's sort of the main thing that would be useful for us. (P81, planning background)

In light of the action-oriented nature of the planning profession, group discussion participants mentioned that the suggestions citizens provided through the survey can be used as a basis for potential planning operations, e.g.,:

...for public transport, the suggestions people make, there is some.. they want to go from this place to another and there should be new routes or maybe some other things that we could improve. (P38, transport background)

On the other hand, understanding people and their daily mobility decisions as an aim was brought up only twice. The first statement was connected to the aim of the survey:

...here we are trying to get at people's feeling more sort of at the abstract level, to find about the reasons why people choose certain routes, if they are good or not. (P81, planning background)

The second statement was connected to the relationship between encouraging sustainable mobility behaviour and localised experiential input of the citizens:

....I think it would also be interesting just to know what kind of routes and proposals they have, I mean, in the sustainable mobility way and there then we could also see further what are the motives for choices. (P73, transport background)

One of the most important potential use cases suggested by the practitioners was to utilise the collected responses to legitimise the already made decisions by the city, which was also pointed out regarding the use of conflicting evaluations. For instance, bringing about the diversity of the opinions in the dataset was considered to be a way to justify the earlier decisions prioritising the city centre development:

...we should really try to use it further in our argumentation of making the city centre more liveable, like try to pick up what the citizens say or who use the services and what they want. I mean it is always difficult to argument what you want to do, why you want to do because someone is

always against it but then if you can say: hey, people said that they want it so we should.. (P73, transport background)

Another potential use case for the citizens' travel experiences that was suggested was to use it for checking how already carried out decisions are perceived by the public. Through longitudinal studies, e.g., a study of changes in the most problematic areas in 2014 and 2019, it was suggested that CoL can assess the success of their operations. It should also be added that one practitioner (P84, planning background) questioned the value of this information as it would only point out the obvious but not anything novel to the practicing planner. It was contested by another practitioner (P88, data management background) who asserted that such changes in the urban scene of the city should be shared with the public, which creates the value for the practitioners.

5.2.2 Usability of citizens' experiences with travel and data management practices in the CoL

During the group discussion, practitioners pointed out that the CoL owns a variety of datasets containing participatory input from the citizens, but the effective use in integrated planning remains an ongoing challenge. Therefore, one of the most dominant and recurring topics about how to make the data more usable throughout the group discussion was the discussion about the way the data should be stored in Trimble Locus Webmap, the data management system, whether in the form of raw data or generalised maps. One practitioner criticised the current practice of the CoL to store the data as it is, i.e., raw data, for its being too personal and incapable of providing a more holistic view of a specific planning case or area:

My problem with these is that, of course it's very good to have the information on the map and it's the only way that is actually useful, but how much do we actually as planners use this data that is here? We have the access to the data but what... Personally, I don't use that data at all. I use the survey data that's been done by, for example, for nature surveys or for example, for flying squirrels, and of course traffic surveys, all the detailed surveys that are made exactly at that area, area that we are planning. But I have not used this data [referring to the older version of the dataset from an earlier study about previous My Lahti meetings]. Of course it's just a question of resources and how useful I experience that these are... if I go to these dots and if I see that one person's opinion of that place that my car broke here, this sidewalk is too narrow here, I can't do anything about it. (P84, planning background)

This comment was contested by the argument that the data aggregation leads to losing parts of the knowledge that can be learnt through the individual comment but the practitioner did not provide an explanation regarding what kind of knowledge would be missing specifically:

We've been talking about it a lot, how to visualise the data and the analysis to generalise the data; people were thinking that it is better to have the raw data because you lose some information when you generalise it. (P88, data management background)

The overall consensus was to include both a thematic map -that offers the big picture of the situation and can be used together with other maps in the system- and the original comment -that represents the raw information coming directly from the respondents- in the Trimble Locus Webmap.

For the usability of the datasets, few practitioners suggested that the inter-departmental as well as inter-organisational dissemination of the collected datasets is at least as crucial as the quality or the representation style of the data content. For inter-departmental dissemination, the discussion mostly revolved around transferring and storing the data in Trimble Locus Webmap as all the civil servants working in the city-wide organisation have access to the database. However, the database is accessible only internally in the city organization and used mostly by the employees of the Technical and Environmental services. Accordingly, promotion of the available datasets was also pointed as imperative:

We were also talking about sharing something on a paper at our offices, that you could see something on a wall, for example, that tells you this kind of dataset that you could use and get to know. So, that would be a way to disseminate this information. (P26, data management background)

For inter-organisational dissemination, the discussion also focused on the means of disseminating the knowledge, e.g., improving the already existing Trimble Locus Webmap or making use of the online analysis tool of the survey website, rather than how or for which purpose the data can be used by other organisations. Planners also pointed out their ongoing interest in opening up data to the public, not only to the partnering organisations such as Lahti Region Development (LADEC), but they have not stated what they would expect from such sharing specifically. Additionally, practitioners were also aware of the dataset containing potentially sensitive information that cannot be shared with the public. Nevertheless, only a very few practitioners pointed out that having access is only one side of the coin whereas being able to utilise the data still remains paramount.

For increased efficiency in data management within the organisation, one participant (P93, planning background) suggested that the geo-coded responses in the dataset can be classified according to the delegation of roles in the organisation and was supported by another practitioner:

Up till now, what we've been doing is we've been just presenting the data on Webmap, hoping that somebody will find it. Doing something like that.. appoint the task to someone specific. So that's a good idea, yes. Try that [to F3, research background]. It would definitely make it more actionable. (P81, planning background)

Temporal side of data collection was also brought up during the group discussion as the CoL repeats a similar set of participatory planning activities with each 4-year planning cycle, which leads to the accumulation of newer versions of the datasets with similar content. Practitioners' views on the use value of datasets collected previously differed:

"P84 (planning background): There is always the fear that data is also outdated so we should.. We should never use old data. If there are like questionnaires from the year 2011, I think they are way too old already. P88 (data management background): Not necessarily.

P81 (planning background): It depends, it depends.”

Regardless of the conflicting views of what makes a piece of data too old, practitioners agreed that all versions of the collected datasets should be stored in Trimble Locus Webmap denoted with the year of the survey.

5.2.3 Analysis needs of practitioners

Several participants (P26, data management background; P88, data management background; P79, research background) questioned the practice of checking the survey website’s own online analysis tool due to its capabilities to generate only a small set of basic analyses. These practitioners brought forward the need to establish a common way of working with the data in a user-friendly manner by using other software:

That’s something that we should develop together, using those other tools for analysis, as well, not just the [survey websites’s] own tool. (P26, data management background)

I believe there is no limitation what kind of analysis we can or you [to F3, research background] can do. It’s only... I think the limitation comes from the visualisation or user-friendliness when you have a lot of data in this place... And if you need to take a deeper look, then you go to [survey website] by yourself and make the filtering. That’s how we’ve done so far and I believe that’s the way to do it. For now. (P88, data management)

The participants also discussed the scale of analysis for the surveys. Several practitioners suggested that they find it more useful if the analysis of the dataset would be done in the scale of a neighbourhood or a planning area and in a way that it brings about the discrepancies among different areas:

“P81 (planning background): P38, since you just mentioned that, did you get any ideas how you could use this for public transport planning?

P38 (transport background):, Yes, I think like to look at the positive and negative experiences if there is differences between areas. There is maybe negative experiences in some areas with public transport and then some other areas...

P81: So you mean more of sort of on a neighbourhood level?

P38: Yes.

P81: Okay.

P84 (planning background): I think so, too, that would be more accurate if you take only a smaller part. If we are thinking about the whole Lahti area, that’s way too big area to get a detailed enough information that is useful to a planner.”

5.2.4 Reliability of citizens’ experiences with travel collected through an online, map-based survey

One practitioner raised concerns about the usefulness of the dataset in relation to its reliability as the dataset contains the kind of knowledge that is too personal and cannot be acted upon by a civil servant:

I have kind of difficulties in finding out the usefulness of the routes because it so much depends on the person's own personal everyday routes and we can't really do anything about those. (P84, planning background)

The concerns were shared by another practitioner (P81, planning background) who also took part in the planning of the survey and referred to the earlier discussion of “actionable features of aesthetics”. This argument from the planning stage of the survey was used during the discussion to legitimise the preconceptions of practitioners what they think they can and cannot do when it comes to working with experiential input of citizens. However, drawing the line between too personal, i.e., irrelevant input for planning, and localised experiential input, i.e., relevant input for planning, was not specified by any of the practitioners during the group discussion.

Several practitioners reminded of the caveats concerning the various limitations of the dataset and recommended critical thinking before taking the local experience knowledge into use. The examples of such include data representativeness and spatial accuracy:

“P81 (planning background): So it's way for people voluntarily to share their information on a public platform.

P79 (research background): Yes, yes. There are many different..

P88 (data management background): Yes, yes.. But the problem.. You get the data from the people that are using it.

P79: Yes, it's not representative. Very good point, because that's a very special population.

P88: That's true. People are already.. If you upload an application of forest, they are people interested in forest services. So it's not a very representative...”

....the problem with the survey is that there are so many questions and we don't really know how careful people are when they are answering these. Are they getting really tired already when they [speaking indistinctly] oh there is another question, I just put something here. (P84, planning background)

5.2.5 Reasons for practitioners' interest in conflicts

The topic of conflicts was discussed several times during the session. The conflict potential of places was regarded as a phenomenon that requires a deeper understanding by several participants. However, only two participants (P81, planning background; P52, services background) were able to state the reason why the conflict potential interests them. The first reason stated was that the practitioner (P81) saw conflicts as a means to bring up disagreements among the public. By doing so, the practitioner suggested that disputed decisions can be justified by being able to show that there are also residents who are in favour of the decision, not only those who are oppose to it; similar to the statements made about using the collected data to justify decisions concerning the city centre (see section 5.1.1):

...it can be very useful to be able to show that, look, people don't agree when someone says that they don't like something then you can say that not everyone agrees with you. Some people like it.

The second reason stated was improvement of public services-oriented. The practitioner (P52) argued that studying the conflicts, especially by focusing on the negative experience points, can unravel hidden improvement needs in the services that have gone unnoticed by the practitioners and service providers.

5.2.6 Connections between land use, transport, services and housing through citizens' experiences with travel

One practitioner (P52, services background) brought up the idea that the dataset can be used for improving the services the city provides in relation to the experiences with public transport. The idea was re-formulated and expanded by another practitioner to capture the essence of the connection between transport and services:

How do the places and the routes relate to each other, is there something there that could guide us towards developing better services in order to improve the mobility? (P81, planning background)

However, participants could not follow up the idea by recognising concrete steps to be taken for such improvement. Similarly, one practitioner (P59, planning background) questioned whether the collected dataset can be utilised to identify suitable places for new housing. Another practitioner (P38, transport background) proposed that a study of positive experiences can help. Nevertheless, neither the suggestion nor the question was taken forward.

As mentioned in the section 5.2.1, travel experience was explicitly considered as having the potential to contribute to the land use planning and transport planning decisions, although for the latter suggestions were fewer.

5.2.7 Survey design

During the group discussion, practitioners shared their insights on how online public participation surveys should be designed to accommodate their knowledge needs.

One practitioner asserted that developing surveys targeted to a specific group of people would be more useful:

It would give us more information if we made the survey with children only and with middle-aged people only and with students only and with elderly only. (P84, planning background)

Another practitioner solidified this idea with an example:

For example along [a street in central Lahti], there would be a place that old people experience as very unpleasant but young people experience as a very pleasant place. And now you [to P84, planning background] are planning a school campus in that area, then you would give more weight to young people's opinions, for example or something like that. (P81, planning background)

Similar to the survey target group, survey target area was also criticised in relation to specificity of the survey themes:

I use the survey data that's been done by, for example, for nature surveys or for example, for flying squirrels, and of course traffic surveys, all the detailed surveys that are made exactly at that area, area that we are planning. (P84, planning background)

...it's actually quite a good learning for us and maybe you [to P79 and F3, both research background], as well that we have this kind of dataset and we've done a second time and then we have this [referring to the older version of a survey with similar themes from 2014] dataset and it has been very useful because it was a specific theme and specifically done. It has been used a lot. This [referring to the recent survey, for details see chapter 4] is much more difficult to approach. Not to say that it is useless but important to try and make it useful. (P81, planning background)

The number of questions was also criticised in relation to possible respondent fatigue:

...but the problem with the survey is that there are so many questions and we don't really know how careful people are when they are answering these. (P84, planning background)

6 Discussion

In this chapter, implications from the implementation challenges of citizens' travel experiences into integrated planning processes are discussed. As the change-oriented design science approach puts emphasis also on the research process itself, the implications from the research process are also included in the chapter.

6.1 Lessons Learnt from the Outcomes of the Research Process

Overall, the practitioners recognised the value of travel experience as a potentially useful planning concept. However, such recognition was presented mainly in terms of how the collected travel experience data can directly inform the practitioners for conceiving planning actions. By the virtue of that planning is rendered to be an act of connecting knowledge to action (Friedmann, 1987), practitioners' professional lens immediately focus on the direct opportunities of implementation. On the other hand, understanding human motives as a means to make travel experience operational in devising planning tasks gained limited attention. This indirect way of informing the planning practice, unlike looking for direct connections between the input and the output, is presumably impractical for the practitioners. To illustrate, the link between improving the experiential quality of active modes and promoting those modes was barely mentioned by the practitioners, only after one of the researchers attending the group discussion put the idea forward. On the other hand, practitioners mentioned several times looking at places which were marked with negative experiences, i.e., problematic places, in order to find out places to "fix".

The findings also suggest that practitioners tend to conceptualise how to effectively implement citizens' experiences with travel into the planning process in relation to the tool of implementation, opening up a discussion of usefulness, usability and technologies. In particular, practitioners in the CoL based their usability suggestions on the data management system currently in use. Findings suggest a higher recognition of the instrumental/technological side of the bidirectional formative influence between the actors and the available technologies of the planning authority. Focusing primarily on the constraints and the "needs" of the tool might hinder transformative thinking processes as it is heavily based on the established practice of doing something without reflection. On the other hand, the primacy of the technologies on the use of the concept also presents an opportunity towards an integrative approach in planning. The technologies used in the process materialise the knowledge base of the sectors and the representation of the knowledge is crucial to develop common understandings of the concepts by land use planners and transport planners (Stead, Geerlings & Shiftan, 2012). If "the language barrier" (te Brömmelstroet & Bertolini, 2008) between the professions is an impediment, then tools can be considered as "the alphabets" with which planners generate and visualise their own units of knowledge which would, otherwise, remain implicit. Therefore, thinking about the concepts through relevant tools can be constructive in certain cases. It should also be noted that this particular discussion of the usability and usefulness of travel experience and the tool of implementation, i.e., data management system, can be generalised into the usability and usefulness of any type of public participation data. In other words, in this particular discussion, the challenge was not about the implementation of human experience into planning system, but rather on a more general level challenge of participatory planning.

The attitudes of planning professionals and transport professionals can be compared based on the activity levels of practitioners and the percentages of statements made by sector during the discussion. These findings suggest that planning professionals are more familiar with discussing the potentials of citizens' localised, experiential input in planning than the transport professionals, even though the subject is essentially about mobility. During the group discussion, it was mentioned that traffic safety surveys or surveys concerned with the functioning of traffic in general are rather familiar to the transport professionals. On the other hand, a survey accounting for the perceptions of the travel was new to the transport professionals as much as it was to the planning professionals. Regardless, planning professionals were quicker to ideate implication possibilities, needs and challenges. Such a discrepancy between sectors in the adoption of communicative rationality ideals has two implications. First, planning professionals put the primacy on linking the travel experiences with the physical characteristics of the built environment. This emphasis was the overarching conceptualisation of how travel experiences can be made operational throughout the group discussion. Therefore, transport professionals mainly followed planning professionals' conceptualisations, rather than expanding the discussion to conceptualise citizens' experiences with travel to have a direct impact on the mobility system. Second, the difference between planning and transport professionals' familiarity with working with citizens' inputs can be seen as a barrier to integration in land use and transport planning. This level difference can impose a difficulty in establishing a healthy dialogue based on the mutual understanding of concepts by different professions and can be categorised as a substantive difference (te Brömmelstroet & Bertolini, 2010). Moreover, such discrepancies in knowledge of what works (Vigar, 2017) also lead to power influences between the actors of the system as knowledge is said to be power (Dobrucká & Šimonová, 2017).

The range of potential uses of travel experiences suggests that practitioners recognise the expansion of what the role of a planner is within the integrated planning practices influenced by communicative rationality. For example, an instrumental rationality model of planning would not look at the conflicting inputs from the citizens as the problem framing would be defined by the "value-free" expert knowledge defined by empirically established "facts". However, paying attention to the plurality of problem definitions open up the strict role of a planner to a more adaptive one (Özdemir & Taşan-Kok, 2017). In connection to the questioning of the role of a planner, the potential uses also suggest that a shift of responsibility takes place from the planner acting with instrumental rationality and absolute authority to the citizens having the localised, experiential knowledge of their own environment. To illustrate, instead of the planners deciding, announcing and then defending (Vigar, 2017) the decision of developing the city centre of Lahti, practitioners suggested that the fact the majority of the survey responses accumulated in the city centre can be used to justify the decision. Similarly, practitioners mentioned that the collected responses also bring about the diversity of opinions within the society, which was seen as a legitimacy tool for the planners' decisions.

Practitioners' promptness to decide on the actionable aspects of citizens' experiences with travel signal a lack of reflective questioning to already established conceptions of what can be a part of the planning practice contested with the communicative ideals. Similarly, practitioners postulated that citizens' travel experiences can be too personal for a planner to be used as a basis for planning actions. Such conceptions suggest that practitioners can skip reflecting upon their reasoning by climbing up the ladder of inference so hastily

(McArthur, 2014) that they do not question what is relevant and what is not relevant for the planning practice. Dynamics of organisational learning as well as the planning practice cannot be materialised as new organisational habits, if the practitioners do not exercise reflective and critical thinking on the process. Even though planning itself is a dynamic practice, planners' acts can be still normative and habitual as the organisational context remains the same. These habitual tasks usually are not reflected upon within the business-as-usual style of working and create black box processes (Binder & Boldero, 2012). This hastiness in reasoning and questioning of whether travel experiences are "too personal for a planner to act upon" can also be explained as a result of the accountability pressures on civil servants. Planners often are challenged with double binds of accountability and "apparent arbitrariness" (Forsyth, 1999). The accountability of practitioners can be discussed in several perspectives (based on Sager, 2009);

- Within the *democratic accountability* perspective, a planner is held answerable to the public through her way of use and the impact on the public good. She is also expected to listen and act according to the citizens' interests as well as advocate those in need of empowerment.
- Within the *economic accountability* perspective, a planner is expected to favour resource efficiency and cost effectiveness for the use of public goods as well as institutional resources.
- Within the *managerial accountability* perspective, a planner is held answerable to her superiors and expected to operate within the boundaries set by the organisational rules, responsibilities, strategies and budgets.
- Within the *professional accountability* perspective, a planner is expected to resort to her expert knowledge and operate within the framework of "what a planner is".

These different types of accountability can provide a basis for the conceptions and values of planners for the implementation of travel experience into integrated planning within organisational dynamics, leading to a lack of reflective thinking on the process. To illustrate, the practitioners' discussion concerning whether they should use aggregate analyses of travel experience or individual evaluations can be explained as a clash between democratic accountability and economic accountability. Within the democratic perspective, all participatory input should be treated equally. Moreover, aggregation of data often leads to losing the input of the marginalised. On the other hand, as the planner is also held accountable on an economic perspective, the use of public resources for the betterment of a minority cannot be justified. Similarly, the reliability of inputs brings about a discussion of professional accountability. In such cases, a planner needs to balance the weighting of her professional know-how with that of localised, experiential knowledge. Therefore, value choices of accountability perspectives create tensions on what a planner can do and if the input is useful and usable.

6.2 Lessons Learnt from the Research Process Itself

The research process has provided lessons mainly on the trade-offs that had to be made throughout the process. As the change-oriented design science approach brings together researchers and practitioners, the discrepancies in their priorities, objectives, habits and responsibilities inevitably surface. Nevertheless, the primary aim of the research approach of this study was, in fact, bringing those discrepancies to the light through open dialogue and collaboration, in order to benefit from the synergetic outcomes. Therefore, involving

practitioners as active participants of the research process resulted in reconciliation of differences in conceptualisations that practitioners and researchers had, especially concerning routes and survey design. These differences in conceptualisations would have remained hidden and led to research outputs that cannot fully fulfil the needs of the practitioners, if a mutual understanding did not take place between the practitioners and the researchers. Similarly, trade-offs concerning the survey design and research needs also provided crucial lessons. Preparing a survey to be used outside of the vacuum of research is unavoidably challenging to the research objectives and needs. The most user-friendly alternative for the respondents might not necessarily be the most “research-friendly” alternative. Eventually, the choice becomes a meticulous decision of what can be compromised and what cannot be compromised within the research practice. In this perspective, data collection should not be seen as the ultimate goal of public participation. Instead, the utility of the intended participatory input for the planning research as well practice should be decisive.

The relevance of expansive learning theory can be traced as short episodes of learning during the group discussion, especially through its focus on learning new practices while they are being created. Practitioners questioning their already existing organisational practice of data management, analysing its shortcomings as well as conveniences and generating a new, more adaptive practice can be given as an example (see Figure 3 in section 2.3). However, the completion of full cycles of expansive learning was not possible during the course of one session of social interaction. Regardless, the undefined nature of the implementation practice of citizens’ experiential input within the organisational dynamics of the CoL did not prevent the practitioners from generating new knowledge of organisational practices, as a more traditional learning theory would argue the contrary. Nevertheless, studying organisational practices and social side of the planning practice through communicative actions have been challenging. The dynamic nature of the learning process iteratively redefines the concepts and organisational practices to be learnt. Inserting the lens of a research project in the middle of an ongoing planning process falls short in fully recognising the previous episodes of learning, decision-making, knowledge generation and habit forming as there is much left unspoken. Although the toolset of research has been expanded with well-established methods of inquiry, e.g., focus group meetings, understanding how the practitioners as human beings shape the planning process has shown to be a challenge. Especially the difficulties in the visualisation of the dynamic redefinitions of organisational practices further complicate the attempts to surface the tacit knowledge and its conversions within the knowledge generation mechanism.

7 Conclusion

The aim of this study was to explicate the lessons learnt about challenges of operationalising citizens' experiences with travel into an integrated planning process in a mid-sized Nordic city, i.e., Lahti in Finland. The study aimed at unravelling the values and conceptions of planners while they are muddling through complexities and interdependencies of planning issues within organisational dynamics.

Overall, the practitioners recognise the value of travel experience as a potentially useful planning concept. However, findings suggest that practitioners' values concerning the implementation possibilities of travel experience are at a transition from instrumental rationality to communicative rationality ideals, framed by the usefulness and usability of experiences with travel. Practitioners inevitably tend to look for direct implementation possibilities using the immediately available technologies at hand, denoting an attempt to directly link the knowledge with action in a linear process. In this case, interpreting the meanings of the knowledge through a social process of reasoning together is undermined, limiting the possibilities for creating new organisational practices of operationalising the travel experience.

Technologies at the disposal of planners mediate as well as shape the conceptions of planners on the implementation possibilities of travel experience. Findings have shown that the organisational practices in Lahti are not only affected by or created through the habits, values or the power relationships of the practitioners, but also heavily depend on the data management system in use. Additionally, this focus on the technology also represents itself as an opportunity for reconciling knowledge base difference of land use planners and transport planners. By collectively generating a common knowledge base, sectoral differences can be levelled.

In this study, knowledge generation was considered as a central concept towards land use and transport planning integration. However, studying the knowledge generation process through communicative actions remains a difficult endeavour. This is partly due to the fact that tacit knowledge is difficult to surface and social sharing of the tacit knowledge is imperative to knowledge generation. Another reason for the difficulty is that planners do not always recognise the need for reflection if the action is repetitive and bound by habits. In those cases, sharing of experiential knowledge of planners is disrupted because the planner can skip the verbal explanation of the action completely. Last but not least, the lack of research methods that can explicate the very "human" side of the planning practices also contributed to the difficulty. The research process suggests that the ways in which institutional practices are materialised within the dynamic, adaptive and non-linear nature of the organisational learning model are difficult to capture, explicate and visualised.

As expected, what can be achieved with one iteration of experiential case study analysis and within the timeframe of a master's thesis is limited. Further research is needed to conduct a more systematic exploration of the ways human experience is made operational in the planning process, covering a longer period of time. More importantly, the repertoire of planning research should be expanded via further research to include research methods that can study and explicate how practitioners as humans shape the planning process, especially within the framework of action research and design sciences. These new methods should be developed in close collaboration between researchers and practitioners, emphasising an iterative and experiential research approach. In order to tackle the

difficulties in socialising the tacit knowledge of the practitioners, new visual methods introducing additional understanding of how planning practices in sociological terms are being formed should be developed.

To conclude, in order to achieve a sustainable and human-centric mobility system that accounts for the travel experiences, transport planning needs to recognise its limitations and to expand its knowledge base. Integrated planning practices, shaped by communicative rationality ideals, can find ways to enable transition to sustainable travel modes without compromising the overall quality of travel and thus, quality of life. By tapping into planners' values framed by socio-material contexts of organisations, re-thinking of the urban mobility system catering for positive experiences with sustainable modes of transport is possible.

8 References

- Banister, D. (2008). The sustainable mobility paradigm. *Transport policy*, 15(2), 73-80.
- Banister, D., Givoni, M., Macmillen, J., & Schwanen, T. (2013). Thinking change and changing thinking. In M. Givoni & D. Banister (Eds.), *Moving towards low carbon mobility* (pp. 267-283).
- Bassett, K. (2004). Walking as an aesthetic practice and a critical tool: Some psychogeographic experiments. *Journal of Geography in Higher Education*, 28(3), 397-410.
- Bergstad, C. J., Gamble, A., Gärling, T., Hagman, O., Polk, M., Ettema, D., ... & Olsson, L. E. (2011). Subjective well-being related to satisfaction with daily travel. *Transportation*, 38(1), 1-15.
- Binder, G., & Boldero, J. M. (2012). Planning for change: the roles of habitual practice and habitus in planning practice. *Urban Policy and Research*, 30(2), 175-188.
- Boelens, L., & de Roo, G. (2016). Planning of undefined becoming: First encounters of planners beyond the plan. *Planning Theory*, 15(1), 42-67.
- Brace, I. (2018). *Questionnaire design: How to plan, structure and write survey material for effective market research*. Kogan Page Publishers.
- Campbell, H., & Marshall, R. (2000). Public involvement and planning: looking beyond the one to the many. *International Planning Studies*, 5(3), 321-344.
- Cao, X. J., & Ettema, D. F. (2014). Satisfaction with travel and residential self-selection: How do preferences moderate the impact of the Hiawatha Light Rail Transit line?. *Journal of Transport and Land Use*, 7(3), 93-108.
- Champlin, C., te Brömmelstroet, M., & Pelzer, P. (2018). Tables, Tablets and Flexibility: Evaluating Planning Support System Performance under Different Conditions of Use. *Applied Spatial Analysis and Policy*, 1-25.
- City Introduction & Context. (n.d.). Retrieved from <http://lahdenvuosi.fi/european-green-capital-2020-application/city-introduction-context>
- Currie, G., Richardson, T., Smyth, P., Vella-Brodrick, D., Hine, J., Lucas, K., ... & Stanley, J. (2010). Investigating links between transport disadvantage, social exclusion and well-being in Melbourne—Updated results. *Research in Transportation Economics*, 29(1), 287-295.
- Curtis, C., & James, B. (2004). An institutional model for land use and transport integration. *Urban policy and research*, 22(3), 277-297.
- De Vos, J. (2018). Analysing the effect of trip satisfaction on satisfaction with the leisure activity at the destination of the trip, in relationship with life satisfaction. *Transportation*, 1-23.

- De Vos, J., Mokhtarian, P. L., Schwanen, T., Van Acker, V., & Witlox, F. (2016). Travel mode choice and travel satisfaction: bridging the gap between decision utility and experienced utility. *Transportation*, 43(5), 771-796.
- De Vos, J., Schwanen, T., Van Acker, V., & Witlox, F. (2013). Travel and subjective well-being: a focus on findings, methods and future research needs. *Transport Reviews*, 33(4), 421-442.
- De Vos, J., Schwanen, T., Van Acker, V., & Witlox, F. (2015). How satisfying is the Scale for Travel Satisfaction?. *Transportation Research Part F: Traffic Psychology and Behaviour*, 29, 121-130.
- De Vos, J., Schwanen, T., Van Acker, V., & Witlox, F. (2018). Do satisfying walking and cycling trips result in more future trips with active travel modes? An exploratory study. *International Journal of Sustainable Transportation*, 1-17.
- De Vos, J., Schwanen, T., & Witlox, F. (2017). The road to happiness: from mood during leisure trips and activities to satisfaction with life. In 96th Annual meeting of the Transportation Research Board (TRB).
- De Vos, J., & Witlox, F. (2016). Do people live in urban neighbourhoods because they do not like to travel? Analysing an alternative residential self-selection hypothesis. *Travel Behaviour and Society*, 4, 29-39.
- De Vos, J., & Witlox, F. (2017). Travel satisfaction revisited. On the pivotal role of travel satisfaction in conceptualising a travel behaviour process. *Transportation Research Part A: Policy and Practice*, 106, 364-373.
- Diener, E. (1984). Subjective well-being. *Psychological bulletin*, 95(3), 542.
- Dobrucká, L., Šimonová, K. (2017): Power and knowledge in planning: the role of time and scale. In *Proceedings: Knowledge management in the 21st century: resilience, creativity, co-creation*. St. Petersburg: St. Petersburg University, 1288-1297.
- Duarte, A., Garcia, C., Giannarakis, G., Limão, S., Polydoropoulou, A., & Litinas, N. (2010). New approaches in transportation planning: happiness and transport economics. *NETNOMICS: Economic Research and Electronic Networking*, 11(1), 5-32.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Ettema, D., Gärling, T., Olsson, L. E., & Friman, M. (2010). Out-of-home activities, daily travel, and subjective well-being. *Transportation Research Part A: Policy and Practice*, 44(9), 723-732.
- Ettema, D., Gärling, T., Eriksson, L., Friman, M., Olsson, L. E., & Fujii, S. (2011). Satisfaction with travel and subjective well-being: Development and test of a measurement tool. *Transportation Research Part F: Traffic Psychology and Behaviour*, 14(3), 167-175.
- Ettema, D., Friman, M., Gärling, T., & Olsson, L. E. (2016). Travel mode use, travel mode shift and subjective well-being: Overview of theories, empirical findings and policy

- implications. In *Mobility, sociability and well-being of urban living* (pp. 129-150). Springer, Berlin, Heidelberg.
- Fellessen, M., & Friman, M. (2012). Perceived satisfaction with public transport service in nine European cities. In *Journal of the Transportation Research Forum* (Vol. 47, No. 3).
- Flick, U. (2014). *An introduction to qualitative research* (pp. 242-262). Los Angeles: Sage.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative inquiry*, 12(2), 219-245.
- Friedmann, J. (1987). *Planning in the public domain: From knowledge to action*. Princeton University Press.
- Friman, M. (2010). Affective dimensions of the waiting experience. *Transportation research part F: traffic psychology and behaviour*, 13(3), 197-205.
- Friman, M., Ettema, D., & Olsson, L. E. (2018). *Travel and Wellbeing: Future Prospects. In Quality of Life and Daily Travel* (pp. 255-265). Springer, Cham.
- Friman, M., Fujii, S., Ettema, D., Gärling, T., & Olsson, L. E. (2013). Psychometric analysis of the satisfaction with travel scale. *Transportation Research Part A: Policy and Practice*, 48, 132-145.
- Gatersleben, B., & Uzzell, D. (2007). Affective appraisals of the daily commute: comparing perceptions of drivers, cyclists, walkers, and users of public transport. *Environment and behavior*, 39(3), 416-431.
- Geerlings, H., & Stead, D. (2003). The integration of land use planning, transport and environment in European policy and research. *Transport policy*, 10(3), 187-196.
- Goodspeed, R. (2016). Sketching and learning: A planning support system field study. *Environment and Planning B: Planning and Design*, 43(3), 444-463.
- Governance. (n.d.). Retrieved from <http://lahdenvuosi.fi/european-green-capital-2020-application/12.-governance>
- Gärling, T. (2018). *Travel and Feelings. In Quality of Life and Daily Travel* (pp. 41-56). Springer, Cham.
- Hase, S. (2014). Reflective Practice. In *The Sage encyclopedia of action research* (pp. 675-678). London: Sage. doi: <http://dx.doi.org/10.4135/9781446294406>
- Healey, P. (1992). Planning through debate: the communicative turn in planning theory. *Town planning review*, 63(2), 143.
- Healey, P. (1997). *Collaborative planning: Shaping places in fragmented societies*. Macmillan Press Ltd.

- Hrelja, R. (2015). Integrating transport and land-use planning? How steering cultures in local authorities affect implementation of integrated public transport and land-use planning. *Transportation Research Part A: Policy and Practice*, 74, 1-13.
- Isserman, A. M. (1985). Dare to plan: An essay on the role of the future in planning practice and education. *Town Planning Review*, 56(4), 483.
- Jensen, O. B. (2013). *Staging mobilities*. Routledge.
- Johansson, M., Sternudd, C., & Kärrholm, M. (2016). Perceived urban design qualities and affective experiences of walking. *Journal of Urban Design*, 21(2), 256-275.
- Kahila-Tani, M., Broberg, A., Kytä, M., & Tyger, T. (2016). Let the citizens map—public participation GIS as a planning support system in the Helsinki master plan process. *Planning Practice & Research*, 31(2), 195-214.
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic perspectives*, 20(1), 3-24.
- Kangasoja, J. (2017). *Retooling Planning - Towards Trading Zone Capabilities*. Helsinki: Aalto University.
- Khakee, A., Barbanente, A., & Borri, D. (2000). Expert and experiential knowledge in planning. *Journal of the Operational Research Society*, 51(7), 776-788.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall Cop.
- Krosnick, J. A. (2018). Questionnaire design. In *The Palgrave Handbook of Survey Research* (pp. 439-455). Palgrave Macmillan, Cham.
- Land Use and Building Act. (n.d.). Retrieved from http://www.ym.fi/en-US/Land_use_and_building/Legislation_and_instructions/The_Land_Use_and_Building_Act
- Lindelöw, D., Koglin, T., & Svensson, Å. (2016). Pedestrian planning and the challenges of instrumental rationality in transport planning: emerging strategies in three Swedish municipalities. *Planning Theory & Practice*, 17(3), 405-420.
- Lyons, G., Jain, J., & Holley, D. (2007). The use of travel time by rail passengers in Great Britain. *Transportation Research Part A: Policy and Practice*, 41(1), 107-120.
- Mann, E., & Abraham, C. (2006). The role of affect in UK commuters' travel mode choices: An interpretative phenomenological analysis. *British Journal of Psychology*, 97(2), 155-176.
- Mao, Z., Ettema, D., & Dijst, M. (2016). Commuting trip satisfaction in Beijing: Exploring the influence of multimodal behavior and modal flexibility. *Transportation Research Part A: Policy and Practice*, 94, 592-603.

- Maskit, J. (2017). Urban Mobility—Urban Discovery: A Phenomenological Aesthetics for Urban Environments. *Environmental Philosophy*.
- Matos Wunderlich, F. I. L. I. P. A. (2008). Walking and rhythmicity: Sensing urban space. *Journal of Urban Design*, 13(1), 125-139.
- McArthur, P. W. (2014). Ladder of Inference. In *The Sage encyclopedia of action research* (pp. 487-488). London: Sage. doi: <http://dx.doi.org/10.4135/9781446294406>
- Metz, D. (2008). The myth of travel time saving. *Transport reviews*, 28(3), 321-336.
- Middleton, J. (2010). Sense and the city: exploring the embodied geographies of urban walking. *Social & Cultural Geography*, 11(6), 575-596.
- Mladenović, M. N., Forss, K., Guy, M., Kahila, M., & Rüppell, T. (2018). What can transportation planning learn from place-based public engagement method? (No. 18-04172) Annual Meeting of the Transportation Research Board, Washington, D.C.
- Morçöl, G. (2001). Positivist beliefs among policy professionals: An empirical investigation. *Policy Sciences*, 34(3-4), 381-401.
- Morgan, D. (2011). Introduction. In *Focus groups as qualitative research* (pp. 2-7). Thousand Oaks: Sage. doi: <http://dx.doi.org/10.4135/9781412984287>
- Morris, E. A., & Guerra, E. (2015a). Are we there yet? Trip duration and mood during travel. *Transportation research part F: traffic psychology and behaviour*, 33, 38-47.
- Morris, E. A., & Guerra, E. (2015b). Mood and mode: does how we travel affect how we feel?. *Transportation*, 42(1), 25-43.
- Myers, D., & Kitsuse, A. (2000). Constructing the future in planning: A survey of theories and tools. *Journal of Planning Education and Research*, 19(3), 221-231.
- Mäntysalo, R., & Kanninen, V. (2013). Trading between land use and transportation planning: the Kuopio model. In *Urban planning as a trading zone* (pp. 57-73). Springer, Dordrecht.
- Naukkarinen, O. (2005). Aesthetics and Mobility-A Short Introduction to a Moving Field. *Contemporary Aesthetics*, (1).
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge Creating*. New York. Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy sciences*, 4(2), 155-169.
- Olsson, L. E., Friman, M., & Ettema, D. (2018). Quality of life and daily travel: An introduction. In *Quality of Life and Daily Travel* (pp. 3-13). Springer, Cham.
- Olsson, L. E., Gärling, T., Ettema, D., Friman, M., & Fujii, S. (2013). Happiness and satisfaction with work commute. *Social indicators research*, 111(1), 255-263.

- Özdemir, E., & Tasan-Kok, T. (2017). Planners' role in accommodating citizen disagreement: The case of Dutch urban planning. *Urban Studies*, 0042098017726738.
- Pelzer, P. (2017). Usefulness of planning support systems: A conceptual framework and an empirical illustration. *Transportation research part A: Policy and practice*, 104, 84-95.
- Puustinen, S., Mäntysalo, R., Hytönen, J., & Jarenko, K. (2017). The “deliberative bureaucrat”: deliberative democracy and institutional trust in the jurisdiction of the Finnish planner. *Planning Theory & Practice*, 18(1), 71-88.
- Redman, L., Friman, M., Gärling, T., & Hartig, T. (2013). Quality attributes of public transport that attract car users: A research review. *Transport Policy*, 25, 119-127
- Romme, A. G. L. (2003). Making a difference: Organization as design. *Organization science*, 14(5), 558-573.
- Russell, J. A. (1980). A circumplex model of affect. *Journal of personality and social psychology*, 39(6), 1161.
- Sager, T. (2009). Planners' role: torn between dialogical ideals and neo-liberal realities. *European planning studies*, 17(1), 65-84.
- Schiefelbusch, M. (2010). Rational planning for emotional mobility? The case of public transport development. *Planning theory*, 9(3), 200-222.
- Schön, D. A. (1983). The reflective practitioner: How professionals think in action.
- Schwanen, T., & Wang, D. (2014). Well-being, context, and everyday activities in space and time. *Annals of the Association of American Geographers*, 104(4), 833-851.
- Scott-Villiers, P. (2014). Hermeneutics. In *The Sage encyclopedia of action research* (pp. 404-405). London: Sage. doi: <http://dx.doi.org/10.4135/9781446294406>
- Sheller, M. (2004). Automotive emotions: Feeling the car. *Theory, culture & society*, 21(4-5), 221-242.
- Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of knowledge Management*, 5(4), 311-321.
- St-Louis, E., Manaugh, K., van Lierop, D., & El-Geneidy, A. (2014). The happy commuter: a comparison of commuter satisfaction across modes. *Transportation research part F: traffic psychology and behaviour*, 26, 160-170.
- Stead, D., Geerlings, H. & Shiftan, Y. (2012). Epilogue: The role of instruments, individuals and institutions in promoting sustainable transport: Concluding remarks. In H. Geerlings, Y. Shiftan & D. Stead (Eds.), *Transition towards sustainable mobility* (pp. 347-355).
- Stefansdottir, H. (2014). A theoretical perspective on how bicycle commuters might experience aesthetic features of urban space. *Journal of urban design*, 19(4), 496-510

Straatemeier, T., & Bertolini, L. (2008). Joint accessibility design: Framework developed with practitioners to integrate land use and transport planning in the Netherlands. *Transportation Research Record: Journal of the Transportation Research Board*, (2077), 1-8.

Straatemeier, T., Bertolini, L., Brömmelstroet, M. T., & Hoetjes, P. (2010). An Experiential Approach to Research in Planning. *Environment and Planning B: Planning and Design*, 37(4), 578-591. doi:10.1068/b35122

Sustainable Land Use. (n.d.). Retrieved from <http://lahdenvuosi.fi/european-green-capital-2020-application/4.-sustainable-land-use>

Sustainable Urban Mobility. (n.d.). Retrieved from <http://lahdenvuosi.fi/european-green-capital-2020-application/3.-sustainable-urban-mobility>

te Brömmelstroet, M. (2015). A critical reflection on the experimental method for planning research: testing the added value of PSS in a controlled environment. *Planning Practice and Research*, 30(2), 179-201

te Brömmelstroet, M. (2013). Performance of planning support systems: what is it, and how do we report on it?. *Computers, Environment and Urban Systems*, 41, 299-308.

te Brömmelstroet, M. (2017). PSS are more user-friendly, but are they also increasingly useful?. *Transportation Research Part A: Policy and Practice*, 104, 96-107.

te Brömmelstroet, M. C. G. (2010). Making planning support systems matter: improving the use of planning support systems for integrated land use and transport strategy-making. *Universiteit van Amsterdam*.

te Brömmelstroet, M. C. G., Hoetjes, P., & Straatemeier, T. (2006). Linking information to strategic planning processes. In *International Workshop Modeling and Decision Support for Urban Planning* held at the School of Urban Design, Wuhan University. China, October (pp. 21-23)

te Brömmelstroet, M., & Bertolini, L. (2008). Developing land use and transport PSS: Meaningful information through a dialogue between modelers and planners. *Transport Policy*, 15(4), 251-259.

te Brömmelstroet, M., & Bertolini, L. (2010). Integrating land use and transport knowledge in strategy-making. *Transportation*, 37(1), 85-104.

te Brömmelstroet, M., Hoetjes, P., & Straatemeier, T. (n.d.) Where different types of knowledge meet.

The SUMP concept. (n.d.). Retrieved from <http://www.eltis.org/mobility-plans/sump-concept>

Van Aken, J. E. (2004). Management research based on the paradigm of the design sciences: the quest for field-tested and grounded technological rules. *Journal of management studies*, 41(2), 219-246.

- Van Aken, J. E. (2005). Management research as a design science: Articulating the research products of mode 2 knowledge production in management. *British journal of management*, 16(1), 19-36.
- Van Aken, J. E., & Romme, G. (2009). Reinventing the future: adding design science to the repertoire of organization and management studies. *Organization Management Journal*, 6(1), 5-12
- Van Acker, V., Goodwin, P., & Witlox, F. (2016). Key research themes on travel behavior, lifestyle, and sustainable urban mobility. *International journal of sustainable transportation*, 10(1), 25-32.
- Vigar, G. (2017). The four knowledges of transport planning: Enacting a more communicative, trans-disciplinary policy and decision-making. *Transport Policy*, 58, 39-45.
- Västfjäll, D., Friman, M., Gärling, T., & Kleiner, M. (2002). The measurement of core affect: A Swedish self-report measure derived from the affect circumplex. *Scandinavian Journal of Psychology*, 43(1), 19-31.
- Waddell, P., Ulfarsson, G. F., Franklin, J. P., & Lobb, J. (2007). Incorporating land use in metropolitan transportation planning. *Transportation Research Part A: Policy and Practice*, 41(5), 382-410
- Wang, C. L., & Ahmed, P. K. (2003). Organisational learning: a critical review. *The learning organization*, 10(1), 8-17.
- Willson, R. (2001). Assessing communicative rationality as a transportation planning paradigm. *Transportation*, 28(1), 1-31.
- Ye, R., & Titheridge, H. (2017). Satisfaction with the commute: The role of travel mode choice, built environment and attitudes. *Transportation Research Part D: Transport and Environment*, 52, 535-547.

Appendixes

Appendix 1. Survey questions

Appendix 2. Discussion themes of the group discussion

Appendix 3. Interaction matrix of the group discussion

Appendix 4. Interaction sequences of the group discussion

Appendix 1. Survey Questions

In Appendix 1, detailed breakdown of survey questions is provided.

Legend:

- ▶ Question (question type)
 - Option
 - Pop-up question, i.e., a follow-up question that appears only if the main question is answered (question type)
Help text for the question

Pages:

Welcome page

Do you feel bored while you are in a bus? Do you change your route because you want to walk on a street you find relaxing? Do you have an idea about how to improve your everyday travel experience?

By participating in this survey, your valuable knowledge about experiences while on the move in Lahti will help the City of Lahti to improve your everyday travel experience.

This anonymous survey will take approximately 10-15 minutes to complete. You can quit the survey anytime you wish.

By taking part in this survey, you have a chance of winning 1 of the 3 vouchers worth 50 euros for ticket service of your choice.

Need More Information?

The survey is a part of a research project titled Urban Aesthetics in Motion in collaboration with Aalto University and University of Helsinki, funded by the City of Lahti. As an essential part of the survey, your answers will be used to reach a deeper understanding of travel experience. All your responses will remain strictly confidential and stored securely.

For more information about this research or the survey, please contact *[mail address undisclosed]*.

Ready to Participate?

Your responses will be saved automatically after each answer you provide. By clicking the right arrow on the lower right corner of this page, you are stating that you consent to participate in the study being conducted.

Page 1/6: Background information

Please provide some background information. There is not any question that can be used to identify your identity.

- ▶ Gender (multiple choice)
 - Female
 - Male
 - Other
- ▶ Age (multiple choice)
 - 6-17
 - 18-24
 - 25-29
 - 30-34
 - 35-39
 - 40-44
 - 45-49
 - 50-54
 - 55-59
 - 60-64
 - 65-70
 - 70 and up
 - Prefer not to say
- ▶ Monthly available household income (after taxation) (multiple choice)
 - Under 1000 euros
 - 1001 - 2000 euros
 - 2001 - 3000 euros
 - 3001 - 4000 euros
 - 4001 - 5000 euros
 - 5001 - 6000 euros
 - 6001 - 8000 euros
 - 8001 - 10000 euros
 - More than 10000 euros
 - Prefer not to say
- ▶ Highest level of education (multiple choice)
 - Basic level studies
 - Matriculation examination
 - Vocational diploma
 - Academic degree - Lower level university degree
 - Academic degree - Higher level university degree
 - Prefer not to say
- ▶ ZIP code of the neighbourhood you live in (multiple choice)
 - 15100
 - 15110
 - 15140
 - 15150
 - 15160
 - 15170
 - 15200
 - 15210
 - 15230
 - 15240
 - 15300
 - 15320
 - 15340
 - 15460
 - 15500
 - 15520
 - 15540
 - 15550
 - 15560
 - 15580
 - 15610
 - 15680
 - 15700
 - 15800
 - 15810
 - 15820
 - 15830
 - 15840
 - 15850
 - 15900
 - 15950
 - 16100
 - 16160
 - 19160

Page 2/6: Let's start by mapping some of your everyday places!

Below is a list of your everyday places. Please mark on the map some of the places that you visit daily such as a grocery store, swimming hall, cafe, etc.

Please note that the identity of an individual or the exact location of a home cannot be identified from the answers. If you do not want to provide the location of your home or other places, you can mark an approximate location such as the nearest street corner.

- ▶ My home (drawbutton)

- ▶ My workplace (drawbutton)
You can mark as many places as you wish for schools, daycares, early education centres, adult education centres, etc.
- ▶ Grocery stores (drawbutton)
You can mark as many places as you wish for grocery stores, supermarkets, etc.
- ▶ Places for free time activities (drawbutton)
You can mark as many places as you wish for museums, libraries, concert halls, craft centres, cafes, places of worship, etc.
- ▶ Sports facilities (drawbutton)
You can mark as many places as you wish for outdoor playing fields, gyms, swimming halls, etc.
- ▶ Health and well-being centres (drawbutton)
You can mark as many places as you wish for health clinics, childhood advice centres, dental clinics, etc.
- ▶ Places for other activities (drawbutton)
→ Please specify: (open-text)

Page 3/6: Now let's draw your routes in Lahti!

Please think about different routes you take in Lahti. Using the button below, please draw as many routes as you wish.

Please draw the route(s) as accurate as possible. If you do not remember the exact route, you can draw an approximate route.

- ▶ My routes in Lahti (drawbutton)
You can draw as many routes as you wish!
 - How do you evaluate your overall travel experience along the route? (range)
 - The trips work poorly, are of low standard and worst imaginable. - The trips work well, are of high standard and best imaginable.
 - I feel very bored, fed up and tired. - I feel very enthusiastic, alert and engaged.
 - I feel very stressed, worried and hurried. - I feel very relaxed, confident and calm.
 - What is the purpose of the route? (multiple choice)
 - Commuting or business-related
 - Going to school or a study-related event
 - Running daily errands (e.g., going to the post office)
 - Shopping
 - A social visit or a leisurely activity
 - If other, please specify:
 - Which transport mode do you use for this route? (Please choose all the applicable ones.) (multiple choice)

<ul style="list-style-type: none"> – Walking – Cycling – Public transport – Taxi 	<ul style="list-style-type: none"> – Private car – If other, please specify:
--	--
 - How often do you take this route? (multiple choice)

- | | |
|-------------------------|-----------------------------------|
| – At least once a day | – Once a month |
| – Several times a week | – Less frequent than once a month |
| – Several times a month | |

Page 4/6: Any important points along these routes?

Please, think about the routes you have drawn in the previous question. Can you think of any important point that has an impact on your travel experience along these routes?

These points can be related to anything: a building, a store, a tree or even an empty lot!

Using the buttons below, please show us where these points are. You can pick which button to use based on if the point has a positive or negative impact on your travel experience.

► A positive experience along your routes (drawbutton)

You can mark as many points as you wish!

→ Is a transport mode related to this experience? If yes, please select all the modes that apply. (multiple choice)

- | | |
|--------------------|-----------------------------|
| – Walking | – Private car |
| – Cycling | – If other, please specify: |
| – Public transport | |
| – Taxi | |

→ Please pick all the adjectives that help you describe your experience. (multiple choice)

- | | |
|--------------|-----------------------------|
| – serene | – spacious |
| – silent | – rich |
| – cosy | – impressive |
| – beautiful | – trendy |
| – scenic | – raw/edgy |
| – mysterious | – If other, please specify: |
| – clean | |

► A negative experience along your routes (drawbutton)

You can mark as many points as you wish!

→ Is a transport mode related to this experience? If yes, please select all the modes that apply. (multiple choice)

- | | |
|--------------------|-----------------------------|
| – Walking | – Private car |
| – Cycling | – If other, please specify: |
| – Public transport | |
| – Taxi | |

→ Please pick all the adjectives that help you describe your experience. (multiple choice)

- | | |
|--------------|---------------|
| – chaotic | – messy |
| – noisy | – crowded |
| – unpleasant | – scarce |
| – ugly | – boring |
| – bleak | – out-of-date |
| – gloomy | – smelly |

- If other, please specify:

Page 5/6: Any suggestions for improvement?

Do you have any suggestions for us on how to improve your daily life in Lahti? Please mark on the map already existing places or routes that you think need improvement or suggestions for new connections in Lahti.

- ▶ A place that needs improvement (drawbutton)
You can mark as many places as you wish!
→ Do you have any suggestions for us on how to improve the situation? (open-text)
- ▶ An existing route that needs improvement (drawbutton)
You can draw as many routes as you wish!
→ Is a transport mode related to this experience? If yes, please select all the modes that apply. (multiple choice)
 - Walking
 - Cycling
 - Public transport
 - Taxi
 - Private car
 - If other, please specify:
→ Do you have any suggestions for us on how to improve the situation? (open-text)
- ▶ An new connection needed (drawbutton)
You can draw as many connections as you wish!
→ Is a transport mode related to this experience? If yes, please select all the modes that apply. (multiple choice)
 - Walking
 - Cycling
 - Public transport
 - Taxi
 - Private car
 - If other, please specify:
→ Do you have any suggestions for us on how to improve the situation? (open-text)

Page 6/6: Done!

Thank you for taking the time to answer this survey! Please do not forget to click on "Done" button in order to finish the survey.

- ▶ Please provide your e-mail address if you wish to participate in the raffle for a 50 euro voucher to Ticketmaster. Your e-mail address will not be associated with your answers in any way. (open-text)
- ▶ Do you have anything you would like to share with us before finishing the survey? (open-text)

Appendix 2. Pre-set Discussion Themes of the Group Discussion

The following are the themes set prior to the group discussion in order to set a framework for the discussion. Questions listed under each theme were only shown to the participants as a source of inspiration, but not asked directly. The word “planning” was written in brackets in some questions in the account of that some practitioners were not planners but involved in master planning, transport planning or land use planning.

Theme 1: How would you analyse the collected data, in relation to your knowledge needs for your (planning) tasks?

- How would you examine/study the data to uncover cause-effect relations or relationships between parts of it?
- What kinds of (planning) tasks do you think would benefit more from understanding everyday places and travel experiences in Lahti?
- What would be useful to know about everyday places or travel experience in Lahti?
- What do you think is essential that you get out of this dataset, at a first glance?
- Which part of the dataset do you think has potential for use for your (planning) tasks?
- Which part of the dataset you do not find useful?
- If you have a suggestion about how to analyse the data, can you give an example about how it can help you with a (planning) task?

Theme 2: What would you need in order to make decisions based on knowledge that contains conflicting citizens' evaluations?

- How would you use the data from the survey when there is a disagreement from the citizens' evaluation? What would be useful to know?
- What would be the first piece of information you would want to see in the analysis, if you see conflicting evaluations for the same place?
- How would you prioritise one type of evaluation over other?

Theme 3: How would you communicate the results and make sure that they are useful to various stakeholders?

- How would you show/transfer the data to your colleagues or other stakeholders?
- What kinds of stakeholders would need to be communicated with?
- What would be the first thing you wish to see when checking the data on a map?
- What kind of knowledge should be communicated visually?
- What kind of knowledge should be communicated non-visually?

Appendix 3. Interaction Matrix of the Group Discussion

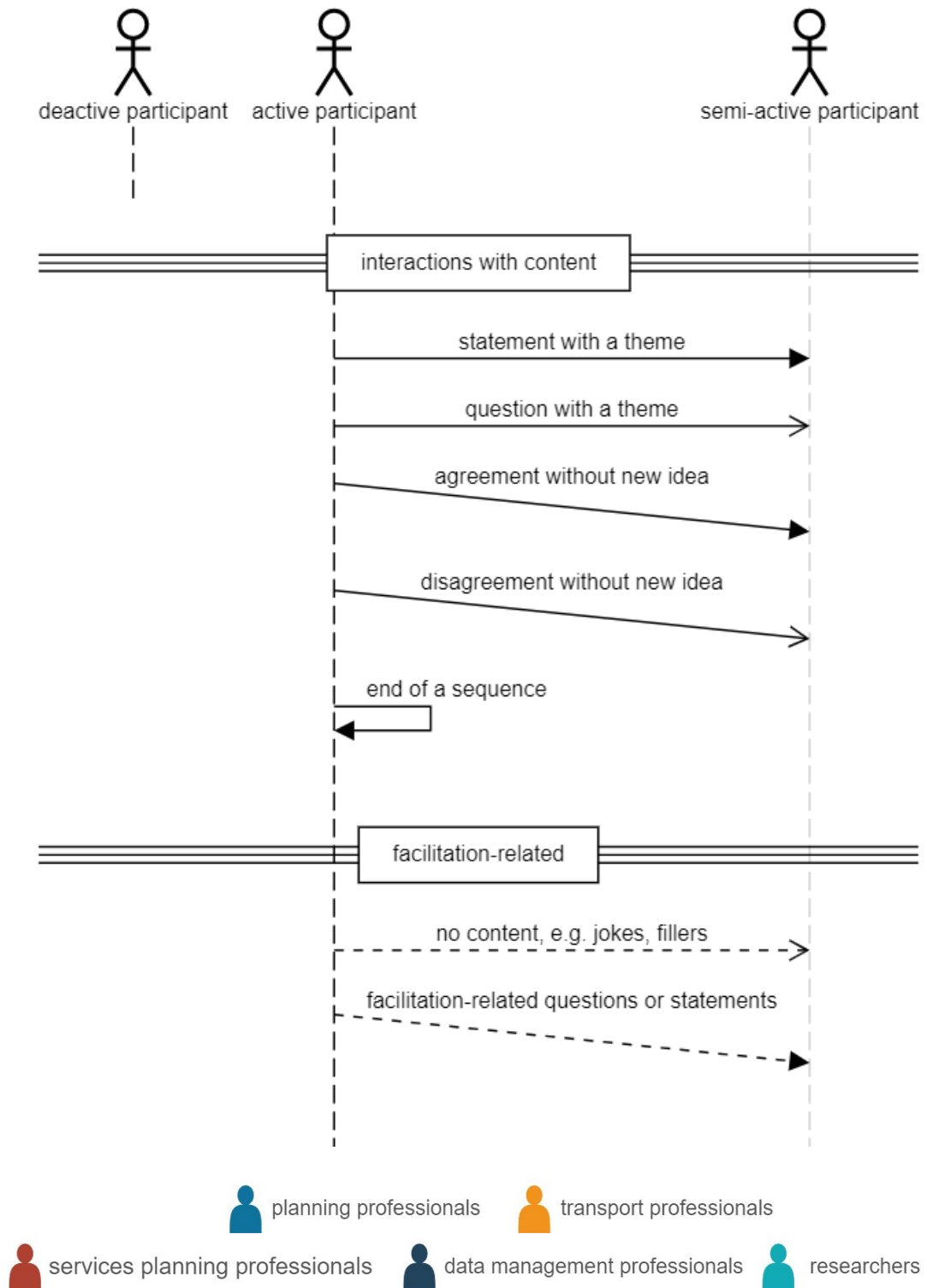
The table below shows the number of interactions between group discussion participants. "from" column shows the participants who make a statement directed to a participant shown in the "to" row. If the participant who makes the statement is the same as the receiver, then it denotes an undirected statement; i.e. a statement that did not generate a reaction from another participant.

to from	P26	P88	P32	P47	P71	P64	P29	P93	P38	P45	P52	P84	P54	P59	P73	P81	P79	P68
P26	2							1			2	3			1	8	4	
P88	1	1										6				6	3	
P32												1				2		
P47																		
P71																2		
P64																3		
P29																		
P93	1															1		
P38															2	6	1	
P45																		
P52	1	1										1				9		
P84	1	2			1				1		1	1			1	12	4	
P54																		
P59												1					1	1
P73									1			1			2	5	3	
P81	13	6	2	1		1			6		7	11			4	12	7	6
P79	2	4										4		1	2	10	2	
P68	1															3		

Appendix 4. Interaction Sequences of the Group Discussion

A detailed breakdown of interactions between participants during the whole group discussion is presented in Appendix 4.

Legend:



Sequences:

